LESSONS IN UNIT 25
Lesson 121 — American Technology
Lesson 122 — From Tin Cans to Smart Phones
Lesson 123 — The Travels of a Piece of Mail
Lesson 124 — Voice of America
Lesson 125 — Choose an American Holiday

BOOKS USED IN UNIT 25
• The Citizen’s Handbook
• The Wright Brothers: How They Invented the Airplane
• Student Workbook (optional)
• Lesson Review (optional)

New York Public Library, New York City
America is a world leader in science and technology. Science is the study of how and why things happen. Technology uses the knowledge learned in science to make things happen. Americans like to make things happen.

On this page and the next is a timeline of many American inventions. Because America is free, inventors can turn those inventions into businesses that manufacture and sell to thousands or millions of people. Scottish immigrant Alexander Graham Bell did just that with the telephone, as did Orville and Wilbur Wright with the airplane, Bill Gates with computer software, and the list goes on.

**Timeline of American Inventors and Technology**

1752 – Among Benjamin Franklin’s many inventions was the lightning rod.
1776 – David Bushnell of Connecticut invented the first practical submarine, calling it the Turtle.
1794 – Eli Whitney of Connecticut patented a cotton gin, which made producing cotton much faster.
1801 – The Fairmount Water Works began using steam power to provide Philadelphia city water.
1807 – Robert Fulton’s steamboat the Clermont traveled from New York to Albany at five miles per hour.
1814 – John Jethro Woods of Poplar Ridge, New York, created a cast-iron plow tip that improved farming.
1831 – Cyrus McCormick invented the McCormick reaper. By 1871 his company sold 10,000 per year.
1836 – Samuel Colt developed the Colt revolver when he was twenty-two.
1844 – Samuel F. B. Morse demonstrated the telegraph in the U.S. Capitol with the words, “What hath God wrought.” His telegraph method made it possible to communicate quickly over long distances.
1850 – Isaac Singer improved Elias Howe’s sewing machine. By 1880 yearly worldwide sales reached 500,000.
1853 – Elisha Otis of Vermont demonstrated his safety elevator at the Crystal Palace Exposition in New York.
1859 – Edwin Drake struck oil by drilling 69.5 feet into the ground at Titusville, Pennsylvania, beginning an oil boom.
1863 – James Plimpton of Massachusetts invented the first practical roller skates with four wheels.
1876 – Alexander Graham Bell made the first telephone call to his assistant Thomas Watson. Two years later a telephone was installed in the White House. In 1882 the Scottish-born inventor became a U.S. citizen.
1877 – Thomas Edison invented a machine that recorded the human voice.
1879 – Thomas Edison perfected the incandescent light bulb.
1891 – Thomas Edison and William Dickson perfected an early type of movie projector called a kinetoscope.
1893 – Whitcomb L. Judson introduced his clasp-locker at the World’s Columbian Exposition in Chicago. It was later renamed the zipper.
1902 – Willis H. Carrier invented air conditioning. He later began the Carrier Corporation.
1903 – Orville and Wilbur Wright fly the “Flyer I” at Kitty Hawk, North Carolina.
1908 – Henry Ford introduced the Model T automobile.
1920 – The first regular radio broadcast began at KDKA in Pittsburgh, Pennsylvania, when the station announced the results of the 1920 presidential election.
1927 – Philo Farnsworth demonstrated the first television. The first television image was a dollar sign.
1937 – Engineers from the Union Pacific Railroad built the first ski lift. It was used at Sun Valley, Idaho.
1948 – Leo Fender began to sell electric guitars.
1951 – The U.S. Census Bureau purchased the first commercial computer, called the UNIVAC 1, from the Eckert and Mauchly Computer Co. of Philadelphia.
1962 – On July 23, the Telstar satellite, invented by AT&T and launched by the National Aeronautics and Space Administration (NASA), beamed the first live video images from America to Europe and from Europe to America.
1965 – The Digital Equipment Company introduced the first computer with integrated circuit technology.
1969 – American astronaut Neil Armstrong became the first human to walk on the moon.
1970 – Corning Glass created an effective optical fiber which used light to send information.
1973 – Dr. Martin Cooper and his team at Motorola invented the first portable mobile phone.
1974 – American stores began to use barcodes. Checkout stands use laser technology to read them.
1975 – High school friends Bill Gates and Paul Allen formed Microsoft, which produces computer software.
1977 – Two thousand customers in Chicago began testing cell phones. These phones came to be called cell phones because geographic areas are divided into “cells.” Each cell has its own cell phone tower. A cell phone works by transmitting radio waves to the nearest tower.
1981 – NASA launched and landed the first Space Shuttle.
1983 – Each year Time Magazine names someone the “man of the year.” In 1983 the magazine named the personal computer “machine of the year” instead.
1996 – Stanford University grad students Larry Page and Sergey Brin began working on an Internet search engine. The following year they named it Google.
2001 – Apple Inc. released the iPod.
2007 – Apple Inc. released the iPhone.
Created in the Image of God

The Christian worldview encourages the development of technology. Christianity recognizes that God created human beings in His image (Genesis 1:26). God created people with minds that can think, investigate, research, learn, and compile information. We have technology because we have minds. You will not see or hear about rat technology or mosquito technology because those creatures do not have the minds necessary to develop it. Christians believe that God commanded humans to “fill the earth, and subdue it” (Genesis 1:28). Obeying this command involves a belief that the world makes sense, that we can understand it, and that we can use it. We must be good stewards of the physical world that God placed in our care. We can use it to live well and to bless others. Christianity honors work (Colossians 3:23). Christians are willing to work to honor God, to provide for ourselves, and to help others. We believe that what we do can make a difference in the world, so we work for that purpose.

Free to Work and Create

The freedom that we enjoy in America enables people to pursue their interests with energy and enthusiasm. If someone has an idea for an invention or a business, he or she can work to fulfill that dream without the need to get approval from a government official. The United States has always valued education. A good education trains the minds that produce technological advances.

Our country has abundant natural resources and a large workforce, but these alone do not guarantee the development of technology. Americans have always believed that it is important to be productive. Productivity involves to what degree workers are able to use abilities and resources to produce goods and services.

Because we have freedom of speech, we can communicate freely. When we learn history, we learn what past Americans have communicated about what they did. Having this knowledge helps us build on what past generations have learned. New technology builds on the technology produced in the past.

Government and Technology

Government plays a role in encouraging technology. America has benefited from a stable government. Stability helps people develop new ideas and inventions. It is hard to do research and invent new products when people live in constant fear of war, revolution, government corruption, and economic uncertainty. American government has also provided copyright and patent protection to people who develop new products. See patent office on page 757. When a book is copyrighted, others can not legally copy it. When an invention is patented,
others cannot legally make something exactly like it. A lack of copyrights and patents would discourage people from inventing because an inventor would not be able to receive the profit he deserved from manufacturing and selling what he has produced from his own creativity. The most important way that our government encourages the development of technology is by staying out of the way of individuals and private businesses and protecting their freedoms.

**Technology for All**

The way that technology has the greatest impact is when individuals use it to serve the greatest number of people. A person can make a profit by developing technology to produce better yachts and limousines for the wealthy. However, more Americans have made more income and have helped to raise the standard of living for a greater part of the American public by developing technology that helps many people. For instance, when the telephone and the automobile were first invented, they were seen as merely playthings for the wealthy. It was when Americans figured out a way to make these products available at a reasonable cost that millions were helped by them, and American life was improved overall. Jobs were created, too, which helped even more people and the American economy as a whole.

**Communication Technology**

Communication is sharing ideas and information. Communication technology helps us to share information. It also helps us share ideas faster and with more people. American technology has created or improved many means of communication (various types of communication are often called media). Samuel F. B. Morse developed a successful telegraph that transmitted information quickly over long distances. At right is a message President Lincoln wrote, which was sent by telegraph to General Ulysses S. Grant during the Civil War. It reads: “I have seen your dispatch expressing your unwillingness to break your hold where you are. Neither am I willing. Hold on with a bulldog grip, and chew and chop, as much as possible.” Alexander Graham Bell invented the telephone, which made it possible to use electricity to send speech. Thomas Edison invented...
the phonograph, which gave people a way to record and preserve sounds, including voices and music. Americans developed the first commercially successful typewriter, allowing people to communicate their ideas faster. The first author to have a manuscript typed was American Samuel Clemens, known better by his pen name Mark Twain. Italian Guglielmo Marconi invented the radio; but the radio had its greatest early success in the United States. Television was successful in the United States first as well.

American company AT&T created the first communication satellite that made it possible for people to send television video around the world. American computer and Internet technology have enabled people to send and receive enormous amounts of information quickly in almost all parts of the globe. Cell phones have helped people to stay in touch and have helped many people who were experiencing an emergency.

**Technology and Civics**

Technology impacts civic life. For example, technology helps Americans learn about candidates and elections. Inventors have used it to create voting machines. Technology allows Americans to file their income tax returns electronically. Technology allows first responders to help citizens faster. Television technology makes possible C-SPAN, the cable and satellite television service that broadcasts meetings of Congress. Through C-SPAN almost every American can see more of what actually goes on in Washington. Commercial radio and television stations also use technology to keep Americans informed about their government. See photo at right. The Internet allows information about city, county, and state governments to be widely available so
that we know what services are offered and what office we should contact if we have a particular need.

**Technology and the Christian**

Technology, especially communication technology, puts people in contact with new ideas. Some of those ideas are good and some are evil. Wise Christians are diligent to protect their own hearts and minds and those of their children by being careful what technology brings into their lives and minds.

Technology has given Christians the opportunity to share the good news of Jesus with more and more people around the world. Christians have produced television programs, radio programs, and websites that teach about Jesus. Christian missionaries do not have to feel as lonely and isolated as they once did because they can keep up with their loved ones with cell phones and video chatting over the Internet.

. . . faith comes from hearing, and hearing by the word of Christ.

Romans 10:17

**Lesson Activities**

**Thinking Biblically** — In your notebook, make a list of ten ways people have used technology to share the message of the gospel.


**Find Out!** — Ask your parents when they got their first computer.

**Picture This!** — Take a photograph or draw a picture of three kinds of technology your family uses regularly.

**Student Workbook or Lesson Review** — If you are using one of these optional books, complete the assignment for Lesson 121.
God created people with the ability to communicate. We have eyes to see and ears to hear, the ability to speak and write, and a mind that can process information and consider ideas. We can communicate with each other through speech, written words and symbols, a touch of the hand, an expression on one’s face, and what we call body language. The importance of communication is shown by the fact that, when God wanted to communicate His love for us, He sent His message in the form of His Son, whom John 1:1 calls the Word.

Communication is essential in civics. Monuments and memorials communicate respect for the people and events of the past. Signs communicate laws and instructions that help our civic life run smoothly. First responders turn on sirens to communicate that drivers should move their vehicles out of the way. Lighthouses, like the one pictured at left above, flash lights and sound horns to signal information to ships. Political candidates communicate their beliefs and goals to voters. Government officials make public announcements in both print and online editions of newspapers.

The story of the invention and development of the telephone is an example of technology. This story weaves together our desire to communicate, the use of technology, and the impact of communication technology on our personal lives and on our civic life.
The Waves That God Made

What is a telephone? Perhaps the simplest kind is just two tin cans or paper cups and a piece of string. This telephone works because sound travels in waves. This is how it works:

★ Bob and Jane’s parents punch a hole in the bottoms of two tin cans. The children connect the cans by placing a long piece of string through the holes.
★ Each child takes one can and they walk several feet away from one another.
★ Jane puts her can to her mouth while Bob puts his can to his ear.
★ When Jane speaks, the sound vibrates her can, which vibrates the string, which vibrates Bob’s can. Bob hears Jane’s voice.

God created many kinds of waves. Light rays, radio waves, X-rays, and other rays are part of the electromagnetic spectrum. God also created sound waves, which are not a part of the spectrum. Inventors have used both sound waves and waves of the electromagnetic spectrum to create telephones.

On and Off

“Yes” or “no” is the simplest form of communication. The simplest form of electronic communication is also yes or no. An electrical circuit is either complete or incomplete, on or off, connected or disconnected. This binary (two-way) system is a simple form of technology. It is how electronic communication began, and it is still used today.

When Samuel F. B. Morse perfected the electromagnetic telegraph in 1838, it used the on-or-off pattern of electrical impulses to send signals across a wire. Morse developed a code of signals for the alphabet that enabled messages to be sent by telegraph wires over long distances.

From the Telegraph to AT&T

A generation later, Alexander Graham Bell was a teacher of people who were deaf. He followed in the footsteps of his father and grandfather who had developed a system of symbols that gave deaf persons a way to communicate with others. Bell experimented with sound and speech and became interested in transmitting speech with electricity in a way similar to the signals sent by a telegraph. Telegraphs could only send one message at a time. Bell thought that different signals could be sent at the same time, just as people hear different notes at the same time when they listen to music. While researching ways to do this, he learned how to send the sound of a human voice through a wire. When Bell spoke through an experimental device to his assistant Thomas Watson on March 10, 1876, the telephone was born.
Alexander Graham Bell received a U.S. patent for his invention that year. Bell was able to communicate the news of his invention to people from many countries when he demonstrated it at the Centennial Exposition in Philadelphia later that year. In 1877 he formed the Bell Telephone Company with Thomas Watson serving as its manager. Pictured at right are some of Bell’s first inventions, which he personally donated to the Smithsonian Institution. By the end of 1880, over 47,000 telephones were in use. Word got around! Bell’s original company eventually became the American Telephone & Telegraph Company (AT&T).

Operators and Exchanges

For almost one hundred years, AT&T leased telephones to their customers. At first, they were leased to customers in pairs. A businessman, for instance, might have one telephone in his office and another in his home. Calls could only be made between those two telephones.

In 1878 the first public telephone exchange was established in New Haven, Connecticut. A customer would signal his desire to place a call by picking up his ear piece. See phones 1 and 3 at right. An operator at the exchange would respond and connect the caller to the telephone he wanted to reach. The exchange could handle sixty-four customers; but only two conversations could take place at the same time.

Almon Strowger, an undertaker in Kansas City, Missouri, invented an automatic switchboard in 1889. The telephones in this system had a button on them that the caller could push to produce a series of pulses that signaled what telephone he wanted to reach. A system of switches (again using the on-
and-off principle) connected the caller to that telephone.

As telephone use began to spread across the country, AT&T set up telephone poles along the nation’s highways and streets and strung telephone wire on them. AT&T hired telephone operators to operate switchboards. See U.S. Capitol switchboard operators at right.

**Rotary Dials and Touch Tone**

In 1896 Almon Strowger and his associates developed a telephone with a rotary dial. See photos 2 and 4. Customers could turn the circular dial to a series of numbers to reach a telephone that had been assigned that “telephone number.” After the invention of the rotary dial telephone, the human telephone operator was only needed to connect calls to other exchanges (these calls were called long-distance calls) and to look up telephone numbers when a telephone user did not know the telephone number of someone he wished to call. Telephone systems also began to use a dial tone that customers heard when they picked up the receiver. This tone let customers know that they could place a call.

Photos 5 and 6 illustrate phone numbers, the dial tone, and an exchange, in this case, the “Windsor” exchange. Notice that W and I are capitalized. The numbers 2 through 9 on a phone dial had letters printed above them. When someone called the phone number in illustration 5, they dialed W which stood for 9, I which stood for 4, and then the numbers 0-2577.

Bell Labs, the research division of the Bell Telephone System, developed a touch-tone system of placing calls in 1941. This telephone used push buttons that sent tones to an automatic switching system which connected the call. Touch-tone service was offered to the public beginning in 1963 for an extra fee, but most people continued to use rotary dial telephones until the 1980s. Phone number 7 is a 1993 version.
Cordless Phones and Cell Phones

Scientists developed radio technology during the twentieth century, and radio and telephone technology sometimes merged. During the 1930s, a person on land could make a radio-telephone call to a ship at sea for seven dollars per minute. In the 1960s, cordless telephones were developed that used radio signals sent between a handset and a telephone base, which was connected to the wired telephone system. These became available to the public in the 1980s.

A major advance occurred when communication companies began to transmit sound digitally. Sounds could be converted to digital signals, which were basically on-or-off electronic pulses that could be sent or stored. This allowed for greatly improved cordless telephone sound quality, but it also created the possibility of another kind of telephone signal.

The first mobile phones were used in cars, especially police cars. In 1947 Bell Lab scientists proposed a system of phones capable of broadcasting digital signals to towers that would each cover a certain area called a cell. The towers could transmit signals to other towers, so that the call could go as far as the tower network extended. A plan for such a system was developed in the 1970s. Motorola developed the first handheld mobile phone in 1973. It weighed 2 1/2 pounds, was nine inches long, and could be used for thirty minutes after charging for ten hours. Continued development of cell phone technology resulted in much smaller and much more powerful phones.

Phones, Data, and the Internet

The fact that voice signals could be converted to digital form meant that other kinds of data could be transmitted in digital form also. Alexander Graham Bell’s invention was designed to carry the sound of the human voice, but today people also use their phones for sending written information. One way is by text messaging. The first person-to-person text message was sent in 1993.

The network of computer networks called the Internet uses telephone lines, fiber optic cables, and satellites to send digital information signals between computers around the world.
The line between telephone companies and Internet provider companies has blurred. Now telephone companies offer Internet service, Internet providers offer telephone service, and Voice over Internet Protocol (VoIP) phones use the Internet for making calls.

International Business Machines (IBM) invented a personal communicator called Simon in 1992. It was a combination cell phone, pager, fax machine, calculator, calendar, clock, and computer. Since it cost $899, few people could buy it. However, companies continued to work on smart phone technology that would be affordable. In 2007 the Apple computer company introduced the iPhone. In addition to making calls, the iPhone allowed users to access the Internet for e-mail, web browsing, and other applications. Today the iPhone and other smartphones are often used as much for receiving data from the Internet as for receiving calls.

The Break-Up of AT&T

Though a few businessmen formed small telephone companies, especially in rural areas, AT&T had very little competition during its first century. Late in the twentieth century, the Federal Communications Commission (FCC) and Federal courts forced AT&T to break apart into smaller regional companies.

Telephones and Civics

Telephones play an important role in the civic life of a community. We expect government workers on the local, state, and national levels to have telephones in their offices; and citizens expect to be able to contact them by phone. A quick way to get an answer or to register a complaint is to call the government office responsible for the matter. Sometimes the offices of elected representatives get flooded with calls about a piece of proposed legislation, and these calls can make a difference. A quick round of calls can turn out a large group at a city council meeting. Some political candidates pay for automated calls shortly before Election Day that play a recorded message urging voters to support them. Many people debate whether these “robocalls” are effective or simply annoying. The placement of cell towers in a way that does not detract from area scenery or interfere with community life is a continuing issue. Some churches have agreed to let cell towers be placed in their steeples or bell towers.
The most famous government telephone was the “hotline” that was installed between the White House and the Kremlin, the headquarters of the Russian government in Moscow, during the Cold War period of tension between the U.S. and the Communist Soviet Union. In 1962 the two governments had a tense showdown over Soviet missiles being put in Cuba. Communication between Washington and Moscow was difficult and slow. The next year, the two governments established a special line that made communication quicker in the event of an emergency. The first hotline was actually not a telephone but was a teletype machine. The machine sent typed messages that could be translated for the receiving officials. The hotline was often portrayed as a red telephone in the President’s Oval Office. A telephone line using a red phone was installed in 1971. The President and the Soviet leader did contact each other a few times on the hotline, often about events in the Middle East. Satellite communication lines were added in later years.

President Dwight Eisenhower was an intelligent person and an able leader, but during his military career and as President he did not have to place telephone calls himself. Whenever he wanted to call someone, he simply picked up a phone and a switchboard operator completed the call for him. When Eisenhower retired from the presidency in 1961 and moved to his home in Gettysburg, Pennsylvania, he did not know how to use a rotary phone and didn’t know what a dial tone was. A Secret Service agent instructed the former President and five-star general on how to use the device. Eisenhower spent the next hour happily calling friends and experiencing the delight of making telephone calls.

**Telephone Etiquette**

The development and use of telephones created new rules of polite society. One early issue involved what to say when you answered a call. Alexander Graham Bell suggested that a person receiving a call say, “Ahoy!” as a ship would say to another approaching ship. Thomas Edison, who also developed telephone technology, suggested the more simple “Hello?” For many years wealthy people and people in positions of power did not make or answer calls themselves. These were jobs for servants or office staff to do. The master or executive got on the phone only after the connection was established.

In the days when telephones were relatively rare and not used often, local phone systems offered party lines to subscribers. The advantage was that the cost to be on a party line was less than having a private line. A party line allowed up to eight homes to use the same line, and each home had a telephone and a distinctive ring pattern to indicate when the call was for them. The local operator would send the call to the desired party, and all parties on the line would know for whom the call was intended by the distinctive ring. It was possible for people
in the other homes on the party line to pick up their receivers and listen to the call, but it was considered impolite to do so.

Today people commonly make and receive calls and texts on their cell phones in group settings that are often disrupted by the activity. It is not uncommon to see two or more people at a table in a restaurant not talking to each other, but instead talking to or texting people who are not present. As with every new stage in the history of the telephone, new capabilities mean that people have to make decisions about how they will use them.

The fact that telephones are everywhere has changed how life in our communities is lived. Even though the telephone was invented many years ago, two things are still basic: the binary, on-off nature of digital signals, and the need for people to communicate with each other.

When there are many words, transgression is unavoidable, But he who restrains his lips is wise. Proverbs 10:19

**Lesson Activities**

**Thinking Biblically** — Copy Proverbs 10:19 into your notebook.

**Vocabulary** — In your notebook, write your own definition for each of these words: symbol, vibrate, undertaker, interfere, distinctive. Look in the lesson for clues for the meaning of the words. When you are finished writing your definitions, look in a dictionary for comparison.

**Literature** — Read “The First Long Distance Telephone Call” in *The Citizen’s Handbook* pages 148-149, and chapters 1-2 in *The Wright Brothers: How They Invented the Airplane*.

**Find Out!** — Ask your parents when they got their first cell phone.

**Picture This!** — Take a photograph or draw a picture of someone using a telephone or cell phone.

**Student Workbook or Lesson Review** — If you are using one of these optional books, complete the assignment for Lesson 122.
Dear Ellen,

How are you? We are all fine. Our new baby is so pretty. I hope you like the picture I’ve included. I think she looks like Mama. Matt scored 10 points at the basketball game. It snowed last night. Matt and I have been sledding. Dad has fixed the back fence. Now the dog next door can’t dig in our garden this summer! I have to finish up because it’s time for co-op. Write soon. I miss you.

Love,
Laura

Laura put the letter and picture into an envelope and sealed it. In the middle of the front, she wrote Ellen’s address:

Ellen Mitchell
904 Sunset Lane
Waskash, WA 98997

In the upper left corner, Laura wrote her return address:

Laura Stamford
111 Highway 12
Bingham, GA 31678

In the upper right corner, Laura placed a stamp. She put the letter in her family’s mailbox and put up the red flag that indicated to the mail carrier that an outgoing letter was there to be picked up. That afternoon, when carrier Paula drove up to the Stamfords’
mailbox, she took out Laura’s letter, put in the Stamfords’ mail for the day, and placed Laura’s letter in the container that held outgoing mail. When Paula returned to the post office, she put the outgoing mail in the large mailbag that held the day’s outgoing mail from all the local delivery routes.

The Birth of the Postal System

The U.S. Post Office began in 1775, when the Second Continental Congress appointed Benjamin Franklin to be the first Postmaster General. The Post Office Department was created in 1792. The Postmaster General became an official member of the President’s Cabinet in 1872. In 1971 the Post Office became an independent agency called the United States Postal Service (USPS). The Postmaster General was no longer a member of the Cabinet. See historic photos below.
From Bingham to Nunbush to Savannah

At the end of the business day, mail truck driver David put all of the outgoing mail from the Bingham post office into his small mail truck. It included what Paula and the other carriers had picked up as well as what was gathered from the mail drop at the post office and the collection boxes around town. David drove to other nearby small post offices and picked up their mail, too. He carried it all to the larger post office in Nunbush. Henry, a USPS worker in Nunbush, put Laura’s letter and all the other mail that had been brought there on a large mail truck, which carried it to a mail distribution center in Savannah.

There postal workers sent Laura’s letter and all other mail through a machine that sorts mail by shape and separates letters from larger envelopes and packages. This is called the culling operation. Laura’s letter went through a machine that arranges all letters so that the address side on each one is facing up and turned the same way. A machine printed a postmark in the upper right corner. The postmark included the date and the city where the distribution center is located. It also printed cancellation lines across the stamp so that it cannot be used again.

A machine printed an identification code of fluorescent bars on the back of each letter. An optical character reader (OCR) reads the address on the front of each letter. The OCR can read printed addresses as well as handwritten ones. Postal workers send letters that have addresses that cannot be read by the OCR to another center where postal workers sort letters by hand. Since Laura wrote legibly, postal workers put her letter and all the other sorted letters on trays and took them to the next machine to have a barcode printed on them. This barcode, which represents Ellen’s delivery address, will guide all further handling of Laura’s letter. A postal worker put Laura’s letter into a tray for a particular range of ZIP Codes. See photos of distribution center activities on page 771.
Processing Letters and Packages at the USPS Processing and Distribution Center, Merrifield, Virginia

Small Parcel Bundle Sorter

Typing ZIP Codes by Hand

Dumping Small Parcels

Loaded Flat Mail Cart

Flat Mail Sorting Machine

Presorted Carts for Specific Locations

Mail Handler

Loading Flat Mail Cart

Distribution Center
Photos by ClintJCL

Small Parcel Bundle Sorter

Flat Mail Sorting Machine
Postal workers are not the only people who work for American citizens at postal distribution centers. In the photo at right, U.S. Fish and Wildlife employees inspect a package to make sure it does not contain substances that are illegal to ship into the U.S.

**ZIP Codes**

The U.S. Post Office began using ZIP Codes in 1963. ZIP stands for Zone Improvement Plan. Previously, delivery addresses were simply name, street address, and city and state. Addresses in large cities also included a zone to indicate which post office in that city was to handle the letter. For instance, a letter addressed to “Chicago 6, Illinois” went to Chicago’s post office number six. The ZIP Code system divided the country into ten regions, numbered 0 through 9. The first digit of a ZIP code indicates the region. The next two digits represent the sectional center facility that processes mail for an area within the region. The last two digits indicate the specific post office that will deliver the mail to the customer. The ZIP + 4 system, which was introduced in 1983, adds an additional four digits to indicate the particular street or route on which the recipient lives.

**On to Seattle**

Laura’s letter left the Savannah processing plant in a large tractor trailer truck. Laura’s letter was taken to the Atlanta distribution center, where it was placed with other first-class letters on an airplane bound for Seattle. Today the U.S. Postal Service rents space on regular passenger airplanes to send mail quickly to different parts of the country.

**International Mail and Military Mail**

If Laura had written to someone in another country, the handling of her letter would have been guided by the Universal Postal Union (UPU). The UPU was founded in 1874 and is now part of the United Nations. Nations that are members of the UPU agree to accept and deliver mail from other member countries and to send mail to those other countries. Each country keeps the money it collects from international postage in return for sending and delivering mail from other countries. Countries pay fees to each other depending on the difference in the total weight of the mail sent and received between them.
Together the USPS and the Department of Defense operate a system to deliver mail to active duty military personnel and their families. Mail for these individuals is sent to APO (Army and Air Force Post Office) addresses and FPO (Fleet Post Office for Navy, Marine, and Coast Guard) addresses.

**From Seattle to Ellen’s Mailbox**

When the plane carrying Laura’s letter landed in Seattle, postal worker Al put the tray carrying Laura’s letter in his truck and took it to another mail distribution center. At the facility, a barcode sorter separated Laura’s letter for the specific ZIP Code where Ellen lives. The final sorting was done by a delivery sorter that identified the particular carrier who would carry the letter. This sorter even arranges the carrier’s letters into the order they will deliver them.

Trucks carry letters and packages from mail distribution centers to individual post offices. There each postal carrier loads trays of mail into his or her postal service truck or personal vehicle. In a city neighborhood, the carrier parks his truck and then walks to deliver mail to
one neighborhood and then drives the truck to another part of his route, parks it again, and then delivers mail in that neighborhood. Where there are many delivery addresses in a small area, such as when there are several apartment complexes near each other, postal service personnel deliver sacks of mail to secure mail relay boxes for the carrier to pick up during his or her work day so the carrier does not have to carry all of the mail for his route.

The primary job of mail carriers is delivering mail, but they often serve citizens in other ways. Because carriers are in the same neighborhood every day, they notice when something seems not to be quite right. Many times a carrier is the first person who sees a crisis and is able to help immediately before other help arrives. Carriers are important in the lives of people who are lonely because the carrier may be the only person they see every day. The National Association of Letter Carriers gives Heroes of the Year awards to those who have performed heroic acts to benefit their fellow citizens.

In the case of Laura’s letter, Ellen’s address is on a rural route outside of a small town. Carrier Vic put the letter along with the other mail he must deliver in his car. The car has a special steering wheel and accelerator and brake pedals on the right side so that he can drive up to the mailboxes along the road and reach out easily to deliver the mail. The car also has a flashing light mounted on top to show that it makes frequent stops.

Soon after Vic put Laura’s letter in the Mitchells’ mailbox, Ellen took the mail from the mailbox and ran inside the house. She opened and read Laura’s letter, smiled at the baby’s picture, showed it to her family, put the stamp in her stamp collection, and sat down to write a reply. The next day, Ellen put her letter to Laura in her family’s mailbox, put up the red flag, and the entire process began again.

**Postage Stamps**

The first official postage stamps issued by the Federal government went on sale in 1847. The five-cent stamp had a picture of first Postmaster General Benjamin Franklin, and the ten-cent stamp had a picture of first
President George Washington. In 1856 the Post Office Department issued a five-cent stamp honoring President Thomas Jefferson and in 1863 a two-cent stamp honoring President Andrew Jackson. Pictured below are commemorative stamps with photographs NASA has taken from space. The first U.S. commemorative stamps were produced in 1893. They honored the 1893 World’s Columbian Exposition.

Letters are an ancient form of communication. King David wrote a letter to his military commander in 2 Samuel 11:14. Elected officials write letters to people they represent. Presidents write letters. Theodore Roosevelt wrote at least 150,000 letters in his lifetime, and that is just the number of Teddy’s letters that have been kept!

E-mails, text messaging, and posts on social media sites on the Internet have reduced the number of letters that people write, but there is something very special about a handwritten letter from a loved one. A letter is a gift. Most of the New Testament books are letters. The first Christians cherished them. Paul told Christians at Thessalonica:

So then, brethren, stand firm and hold to the traditions which you were taught, whether by word of mouth or by letter from us.

2 Thessalonians 2:15

Lesson Activities

Vocabulary — In your notebook, make a drawing for each of these words that illustrates what it means: cull, fluorescent, optical, legibly, barcode. Write the word under the drawing. Check in a dictionary if you need help with their definitions.

Literature — Read chapter 3 in The Wright Brothers: How They Invented the Airplane.

Creative Writing — In your notebook, write a short story of at least one page about a mail carrier who performs an heroic act for his community.

Find Out! — Where is the post office nearest to your home? What are the days and times it is open?

Student Workbook or Lesson Review — If you are using one of these optional books, complete the assignment for Lesson 123.
1942

This is a voice speaking from America. The voice from America at war. Our voices are coming to you from New York across the Atlantic Ocean to London, from where they are relayed to you in Germany. Today America has been at war for seventy-nine days. Daily at this time we shall speak to you about America and the war. The news may be good or bad. We shall tell you the truth.

Thirteen-year-old Hans heard these words on his shortwave radio in his hometown of Berlin, Germany, early in 1942. His country had been at war for over two years. Germany had declared war on the United States following the Japanese attack on Pearl Harbor on December 7, 1941. Hans had looked forward to the day when he would be old enough to join the German army and become a soldier, but he also dreaded going into battle. Anything might happen. The message he heard made him think again about the country he was wanting to fight.

The words that Hans heard were broadcast from the United States but spoken in his own German language by a series of speakers. The leaders of the United States government knew that in the war against Germany, Italy, and Japan, one of the strongest weapons we had was truth. The Nazi government did not always tell the truth to the German people. They often told the German people lies about America. The U.S. government wanted them to know the truth about the Nazi government and its army. They also wanted the Germans to know that the United States stood for and practiced democracy and freedom. Americans could not send newspapers or pamphlets into Germany, but our nation could reach the minds of the German people by means of shortwave radio.
What Hans heard was the first broadcast of the service that came to be known as Voice of America (VOA). As the war continued, other American broadcasts reached into other countries in Europe as well as countries in Asia, Africa, and Latin America. Before the end of the war, the United States government was broadcasting hundreds of hours of radio programs each week. Two dozen transmitters sent out programs in over forty languages.

1962

The year was 1962. Karl listened to Voice of America broadcasts from his home in Leipzig, Germany. World War II had been over for many years. Karl was too young to remember it. Now, however, he lived with another crisis. After the war, the Communist army from the Soviet Union had taken over the eastern part of Germany. The Communists carefully guarded the border between East Germany, where Karl’s city was located, and West Germany, which was controlled by the English, the French, and the Americans. Hans’ hometown of Berlin was also divided. The Communists had even built a wall down the middle of the city to keep people from escaping into the part of Berlin that was controlled by the Americans. Karl knew that the Communists ruled his country by force. He wanted to be free, and VOA helped him believe that one day he could be free.

This period of history is known as the Cold War era. The Cold War was a constant confrontation between the Soviet Union and the United States. The armies of the two nations did not go into battle against each other. Though there was always a danger that a war would be fought, the real battle was for influence over people. The Soviet Union used
military force to control its citizens. It also controlled them by lying about Communism and about the United States. The United States again used truth as a weapon. Our government broadcast this truth on Voice of America radio. Voice of America told people who were controlled by the Communists the news of the world and the truth about what life was like in the United States.

However, in 1962 (and for many years before and after 1962) the Communists who controlled East Germany and other countries in Eastern Europe were not willing for people to hear the truth from the United States. The Communists usually interfered with the VOA broadcasts by an action called jamming. Jamming is broadcasting radio interference that keeps people from being able to hear radio broadcasts. Sometimes, though, the broadcasts got through; and Karl and millions of others behind the Iron Curtain were able to hear the truth from America. One of the countries in Eastern Europe that suffered under a Communist government was Poland. Pictured above is a Polish immigrant who worked in the Polish Service division of Voice of America.

Later in the 1960s, VOA gave the world a place to hear coverage of Martin Luther King Jr.’s 1963 “I Have a Dream” speech about civil rights in Washington, D.C. It provided coverage of the American landing on the moon in 1969. In the 1970s, VOA honestly and openly told the world the story about two difficult issues for the United States, the Vietnam War and the Watergate scandal that involved President Richard Nixon. Years later, within minutes after the terrorist attacks on September 11, 2001, Voice of America was telling the world what happened that day.

**Sharing the English Language and American Culture**

To attract listeners, Voice of America does more than broadcast news about America and the world. It also helps its listeners understand what life is like in America. One way is by playing American music. Many people in other parts of the world like to listen to VOA because they are fascinated with America and want to learn all they can about our country. VOA broadcasts some programs in simple and slow-paced English to help people in foreign countries learn the English language. Since the English language is used all over the world in business, science, and entertainment, people in other countries know that if they can learn English they have
a better chance of getting a good job and being successful. They eagerly listen to the English broadcasts on VOA to help them learn it.

**Changing Technology**

Voice of America has changed and grown with changes in the world and in technology. It now broadcasts shortwave, AM, and FM radio programs plus television programs. From its headquarters in Washington, D.C., Voice of America broadcasts to over 120 million listeners and viewers around the world. It also shares news on a website.

**The Voice of America Charter**

The Voice of America Charter states its purposes and goals:

★ VOA will serve as a consistently reliable and authoritative source of news. VOA news will be accurate, objective, and comprehensive.

★ VOA will represent America, not any single segment of American society, and will therefore present a balanced and comprehensive projection of significant American thought and institutions.

★ VOA will present the policies of the United States clearly and effectively, and will also present responsible discussions and opinion on these policies.

**Today**

Today, Bong-Hwa in North Korea, Abbas in Iran, and Arghavan in Afghanistan can listen to VOA broadcasts if they get through the jamming by those countries’ governments. People in countries that allow access to the Internet can go to the VOA website. They can learn about the United States, their own countries, and other places in the world. Unfortunately, there are still governments that don’t tell the truth to their people. In addition, some countries lack the money...
to have good sources of information and reliable media to communicate information to their citizens. Voice of America is one way that the United States is a good citizen of the world, and it enables people in other countries to have greater access to things that we Americans hold dear: truth and freedom.

Therefore, laying aside falsehood,
speak truth each one of you with his neighbor,
for we are members of one another.

Ephesians 4:25

**Lesson Activities**

**Thinking Biblically** — Copy Proverbs 21:28 into your notebook.

**Vocabulary** — In your notebook, write the vocabulary words and the letter of the definition that goes with each word: relay, pamphlet, confrontation, reliable, objective.

a. a conflict; a clash of powers or ideas  
b. dependable, performs consistently  
c. to transmit or pass along  
d. undistorted by personal feelings or opinions  
e. brochure, small booklet of information

**Literature** — Read chapter 4 in *The Wright Brothers: How They Invented the Airplane*.

**Creative Writing** — In your notebook, write one or two paragraphs explaining one aspect of American culture as if you were writing an item to be broadcast on Voice of America to people in other countries.

**Picture This!** — Draw a picture of a family in another country listening to Voice of America on the radio.

**Student Workbook or Lesson Review** — If you are using one of these optional books, complete the assignment for Lesson 124.

★ Remember to choose an American Holiday to study this week! ★
**AMERICAN HOLIDAYS**

<table>
<thead>
<tr>
<th>Holiday</th>
<th>Date Description</th>
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<tbody>
<tr>
<td>Martin Luther King Day</td>
<td>Third Monday in January</td>
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<tr>
<td>National Freedom Day</td>
<td>February 1</td>
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<tr>
<td>Groundhog Day and Valentine’s Day</td>
<td>February 2 and 14</td>
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<tr>
<td>Washington’s Birthday</td>
<td>Third Monday in February</td>
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<td>St. Patrick’s Day</td>
<td>March 17</td>
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<td>Tax Day</td>
<td>April 15</td>
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<td>Good Friday and Easter</td>
<td>Between March 22 and April 25</td>
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<td>National Arbor Day</td>
<td>Last Friday in April</td>
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<tr>
<td>Loyalty Day and Law Day</td>
<td>May 1</td>
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<tr>
<td>National Day of Prayer</td>
<td>First Thursday in May</td>
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<td>Mother’s Day</td>
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<td>Armed Forces Day</td>
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<tr>
<td>Memorial Day</td>
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<tr>
<td>Flag Day</td>
<td>June 14</td>
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<tr>
<td>Father’s Day</td>
<td>Third Sunday in June</td>
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*2008 Memorial Day Parade in Chicago, Illinois*
During the early part of the twentieth century, as the threat of Communism was increasing overseas, some Americans began to worry that Communism was going to take over America. They became suspicious of their immigrant neighbors, wondering if they had come to America to try and take it over for the Communists.

The National Americanization Committee was formed in New York in 1915 to promote education in citizenship and civic affairs throughout the United States. Americanization Day began to be celebrated in conjunction with the Fourth of July. The observance was primarily for the benefit of new American citizens. An article in The New York Times from 1915 stated:

On these occasions, it is proposed to present the advantages of citizenship and the study of English and civics, all designed to awaken interest in a more popular participation in American life and affairs by the naturalized population.

The same year, the Milwaukee Sentinel in Milwaukee, Wisconsin, reported:

Uncle Sam has asked the American people to combine Americanization day with the Independence day celebration this year and in every large city of the country special arrangements in accordance with the American government’s request have been made.

The flags, the candy and the other things to gladden the hearts of the children next Monday have all been distributed . . . and a celebration of citywide extent is assured.
The patriotic parade pictured at right took place in Boise, Idaho, around 1918. Beginning in 1921, Americanization Day was celebrated on May 1. This day was chosen because it was the same day when many Communists celebrated the Russian Revolution. America wanted to combat this Communist celebration with one of their own. Interest in Americanization Day grew. On May 1 in 1930, around ten thousand veterans gathered for an Americanization Day rally in Union Square in New York City to promote patriotism.

Congress adopted a resolution in 1949 to designate May 1 as Loyalty Day (instead of Americanization Day). An estimated five million Americans participated in Loyalty Day rallies held across the country in 1950. Congress passed a law in 1958 that permanently designated May 1 as Loyalty Day. Its purpose was stated as being “for the reaffirmation of loyalty to the United States and for the recognition of the heritage of American freedom.” The law requests that Presidents issue an annual Loyalty Day proclamation.

President Dwight D. Eisenhower issued the first proclamation in 1959. A copy of the proclamation, including the presidential seal, is pictured at right. The proclamation stated that “Loyalty to the United States of America, its democratic traditions and institutions, and the liberties embodied in our Constitution is essential to the preservation of our freedoms.” Eisenhower went on to say that “it is fitting and proper that we reaffirm our loyalty to our country and our gratitude for the precious heritage of freedom and liberty under law.”
The photos at left and below were taken during a Loyalty Day parade on Osan Air Base in South Korea in 2005. The parade honored U.S. servicemen and women of the past and the present. The men in the photo below are dressed in historic military uniforms.

Loyalty Day in Newport, Oregon

On May 1 in 1938, about two thousand people attended the first annual Crab Festival in Newport, Oregon. The attendees gobbled up six thousand free crabs that were given away at the event. Organizers were hoping that the festival would provide an economic boost for the area as it suffered through the Great Depression. The illustration below shows Newport in the early 1900s.

World War II got in the way of the Crab Festival during the early 1940s. After the war was over, however, the fishermen returned home from the fighting and the fishing boats were no longer needed by the military to patrol the coast. The Crab Festival was revived, complete with a Crab Festival Queen and a raffle for a new car.

Anxiety over the threat of Communism was high in the United States, and in 1953
the Crab Festival was replaced with Loyalty Days. The local veterans’ organization held a small parade. Over time, the more sombre feel of Newport Loyalty Days became more like the frolicsome Crab Festivals of decades past.

The event continued to grow and expand. There were almost fifty entries in the parade in 1970. Over the years visitors to the annual event have been able to enjoy air shows, boat races, horse shows, scuba diving contests, crab running contests, carnival rides, boat tours, and yacht races. A special ceremony takes place each year to honor the men and women from Oregon who have died while defending our freedom. The name-reading ceremony takes place in a park overlooking the Pacific Ocean.

As the threat of Communism has diminished in recent years, most places have let the observance of Loyalty Day fall by the wayside. Loyalty Day is alive and well in Newport, however, and the annual event is a source of community pride. The photo at right shows how Newport looks today.

**Law Day**

Between the time that Loyalty Day began to be celebrated in America and when it became a permanent observance, another holiday was initiated in our country. Law Day was established as a day to celebrate the rule of law and the freedom Americans enjoy under it.

Charles S. Rhyne served as president of the American Bar Association and as a legal counselor to President Dwight D. Eisenhower. In 1957 Rhyne began promoting his idea for Law Day. He believed that respect for the rule of law was a key factor in individual freedom and justice. Rhyne had observed the coverage American media gave to the Soviet Union’s annual May Day parade like the one pictured at right. The Communists used these celebrations as a way to display their new war weapons. Rhyne wanted Americans to appreciate the contrast between the United States’ reliance on the rule of law with the Soviet Union’s rule by force.

Rhyne’s close relationship with President Eisenhower’s administration made it easier
for his idea to become reality. Eisenhower issued the first Law Day proclamation in 1958. Before the first Law Day observance, Eisenhower issued a statement broadcast on radio and television in which he said, “On this Law Day, then, we honor not only the principle of the rule of law, but also those judges, legislators, lawyers and law-abiding citizens who actively work to preserve our liberties under law.” Read the words of Eisenhower’s proclamation below. A statue of Eisenhower is pictured at right.

*By the President of the United States of America*

*A Proclamation*

WHEREAS it is fitting that the people of this Nation should remember with pride and vigilantly guard the great heritage of liberty, justice, and equality under law which our forefathers bequeathed to us; and

WHEREAS it is our moral and civic obligation, as free men and as Americans, to preserve and strengthen that great heritage; and

WHEREAS the principle of guaranteed fundamental rights of individuals under the law is the heart and sinew of our Nation, and distinguishes our governmental system from the type of government that rules by might alone; and

WHEREAS our Government has served as an inspiration and a beacon light for oppressed peoples of the world seeking freedom, justice, and equality for the individual under laws; and

WHEREAS universal application of the principle of the rule of law in the settlement of international disputes would greatly enhance the cause of a just and enduring peace; and

WHEREAS a day of national dedication to the principle of government under laws would afford us an opportunity better to understand and appreciate the manifold virtues of such a government and to focus the attention of the world upon them:

NOW, THEREFORE, I, DWIGHT D. EISENHOWER, President of the United States of America, do hereby designate Thursday, May 1, 1958, as Law Day.

I urge the people of the United States to observe the designated day with
appropriate ceremonies and activities, and I especially urge the legal profession, the press, and the radio, television, and motion-picture industries to promote and to participate in the observance of that day.

IN WITNESS WHEREOF, I have hereunto set my hand and caused the Seal of the United States of America to be affixed.

DONE at the City of Washington this third day of February in the year of our Lord nineteen hundred and fifty-eight, and of the Independence of the United States of America the one hundred and eighty-second.

DWIGHT D. EISENHOWER

Every President since Eisenhower has also issued Law Day proclamations. Congress passed a joint resolution in 1961 that permanently designated May 1 as Law Day, U.S.A. The resolution stated that Law Day “is a special day of celebration by the people of the United States . . . in appreciation of their liberties and the reaffirmation of their loyalty to the United States and of their rededication to the ideals of equality and justice under law in their relations with each other and with other countries.”

The American Bar Association chooses a theme each year for Law Day programs. They publish an annual planning guide with lesson plans and ideas for classroom and community programs.

God wants His people to be good, law-abiding citizens of the countries in which they live. As long as obeying the laws of the land does not require Christians to disobey God’s law, they must respect their authorities and follow the laws that have been made.

Remind them to be subject to rulers, to authorities, to be obedient, to be ready for every good deed, to malign no one, to be peaceable, gentle, showing every consideration for all men.

Titus 3:1-2

Family Activity

Make a “Laws Kids Have to Follow” book. Instructions are on pages 1017-1018.
Each of these activities goes with one of the lessons on American holidays. Have fun creating, eating, laughing, talking, and making memories together as a family. Please keep in mind that children should be supervised when using sharp tools, using the stove or oven, climbing ladders, looking up information online, and visiting public places.
LOYALTY DAY
AND LAW DAY

“LAWS KIDS HAVE TO FOLLOW” BOOK

Make a book to help little kids understand the concept of obeying the laws of our country.

**Supplies:**

- 8.5” x 11.5” paper
- computer (optional)
- drawing supplies
- 8.5” x 11.5” heavy paper
- hole punch
- ribbon or string

**Instructions:**

★ Refer to the next page to see the text for each page of the book you are making. You may either write the words on the pages of your book or type them on a computer and print them off. Make each page of your book the size of half of a sheet of paper.

★ Illustrate each page by drawing a picture. Illustrate a cover on heavy paper. Use a second piece of heavy paper for the back.

★ Punch two holes in the side of the two covers and each page of your book. Use a piece of ribbon or string about 20 inches long to thread the pages of your book together. First pull the two ends of the ribbon up through the holes from the back. Then thread the ribbon over the side edge and back up through the holes from the back. Tie the ribbon together on the front of the book and cut the ends to make them even. Refer to the photos above. You may keep the book for your family or give it to a family you know who has small children.
Laws Kids Have to Follow

Page 1: The United States of America is a country that is run by the rule of law. This means that there are laws that have been made, and it is the responsibility of every citizen to obey them.

Page 2: Some laws are mostly for adults, but there are a lot of laws that adults and kids have to follow.

Page 3: Kids have to wear a seatbelt or sit in a carseat when riding in a car.

Page 4: It’s the law that kids have to be in school, either at home or in a public or private school.

Page 5: If there’s a law that says dogs have to be on a leash when outside, a kid has to keep his dog on a leash.

Page 6: Kids have to obey laws about where they can and cannot ride their bikes.

Page 7: It’s against the law for kids to write any graffiti on a public structure.

Page 8: Kids have to keep out if there is a “No Trespassing” sign posted.

Page 9: Kids have to obey laws about when and where to cross the street.

Page 10: Kids are not allowed to drive a vehicle on the road until they have a permit or license.

Page 11: If there is a law against littering, that means kids can’t leave their trash on the ground.

Page 12: Kids can’t call 9-1-1 unless there is a real emergency.

Page 13: Kids can’t steal.

Page 14: If we are going to continue to enjoy liberty, justice, and equality in the United States, everyone in the country needs to obey the laws that have been established—

Page 15: Even kids!