

## Unit 1. Artificial Limbs

Artificial limbs are fake arms and legs. Humans and machines make artificial limbs to

(1) replace missing limbs. Over the years, the design and the (2) performance of artificial limbs have (3) improved a lot.

In the past, artificial limbs were heavy and ugly. Artificial hands were (4) metal hooks.

Artificial legs were large (5) pegs made of wood. They didn't bend or move easily and were (6) difficult to use.

Today, artificial limbs are more like (7) natural limbs. They are light and have moving parts.

Some electronic artificial hands (8) respond to (9) movements in the muscles. The fingers can open and close. Artificial legs have (10) rotating knees that (11) bend and (12) extend.

They allow users to (13) climb stairs and ride bikes.

In the future, thoughts will (14) control artificial limbs. Scientists are already making computer chips that will work with the human brain. These chips will allow users to use their brain to move their artificial limbs. They will also allow users to feel (15) objects through their artificial limbs.

## Unit 2. Winners Wear Red

(1) Athletes can choose a (2) uniform of any color. Some (3) simply choose their (4) favorite color. They don't think about it (5) carefully.

But if you're an athlete, you should try to wear red (6) whenever possible. In a (7) recent study, (8) British researchers found that wearing red can help athletes. In fact, athletes who wear red are more likely to win.

The researchers went to some of the largest sports (9) competitions in the world. They wanted to know if changing the uniform color would change the (10) outcome of a match. They studied many athletes in (11) several different sports. The results showed that wearing red gives an (12) advantage. Athletes who wore red won more matches. They beat their (13) opponents who wore other colors.

Of course, you cannot simply put on a red shirt and expect that you will (14) automatically win every match. There are other things that (15) influence the outcome of a match, too. But the color of the uniform seems to be important.

### Unit 3. Noise Pollution

Most people think their home is (1) silent when everyone is sleeping. But (2) maybe there is a little noise from the (3) fridge. Or maybe there is the sound of cars from a (4) nearby road. You may not (5) realize it, but this noise is a form of pollution.

If you ask people about the problem of pollution, many people respond by talking about air or water pollution. But one of the most (6) common forms of pollution is noise pollution.

This is human- or (7) machine-made sound that has a bad (8) effect on human health.

Most noise pollution comes from (9) traffic. However, planes, (10) construction, or even (11) loud TVs add to the problem.

Noise pollution affects our health. It can (12) cause hearing problems and (13) stress. Over time, stress can cause other (14) serious problems in our bodies. People should try to (15) reduce the noise they make. For example, lower the volume on your TV. By reducing our own noise, we can improve our own health and those we live with.

## Unit 4. Understanding the Heart

The heart is one of the five (1) vital (2) organs in the human body. These organs are (3) necessary for humans to (4) stay (5) alive. So it's important to understand how the heart works.

(6) Inside the heart, there are four parts called (7) chambers. The heart beats and fills the chambers with (8) blood. Then the heart (9) empties the chambers. It pumps blood from the chambers through the body.

Blood is carried through the body in tubes called vessels. Vessels that carry blood away from the heart are arteries. Vessels that carry blood back to the heart are veins. Blood carries many important things through the body. It carries (10) vitamins, (11) oxygen, and other important things. It's like a (12) transportation (13) system in the body. If your blood vessels were (14) connected end to end, they would (15) wrap around the Earth twice!

The human heart beats about seventy times per minute. That's 4,200 times per hour! It pumps 7,500 liters of blood through your body every day. It works amazingly hard. So keep your heart healthy!

## Unit 5. Hypertext Literature

Hypertext literature is a fun way to enjoy stories and books. Using (1) electronic (2) devices, readers can (3) interact with hyperlinks in a story. (4) Instead of reading a story from start to finish, readers (5) participate (6) throughout the story. After reading a few pages, readers are (7) given some choices. They need to choose what the characters should do in the story. Readers (8) decide and then (9) click on a (10) hyperlink.

Stories can be put together in different formats using hypertext literature. One type has a (11) central storyline. Links allow the story to go different ways. Readers (12) eventually return to the main storyline. Another format has links that can change big parts of the story. There is more than one ending. Hypertext literature can also be a mix of formats.

*Pottermore* is J. K. Rowling's hypertext novel. It is part of the *Harry Potter* (13) series.

Readers can link to information about the characters. The links help readers understand more about the other *Harry Potter* books. Hypertext can be an (14) exciting way to (15) experience literature.

## Unit 6. Types of Writing

There are many ways to write, called (1) formats. Different formats are used for different (2) purposes of writing. They look different and make the readers think and feel different things.

(3) Poetry is one format. It mixes (4) language and (5) emotions. Poems are created when words are formed into lines. Then a group of lines become a stanza. Lines sometimes (6) rhyme at the end. This means that they have the same sound. For example: *It's a beautiful summer day. All of the children can play.* The “-ay” sound rhymes at the end of both of these lines.

A (7) novel is a book that usually (8) contains (9) characters. Novels have a (10) plot and a (11) sequence of (12) events, and these come together to make the storyline. The setting is the place where the story happens.

An (13) article is another format. It gives information and is often found in a newspaper or a (14) magazine. It contains facts about a topic.

Take the time to read different formats of (15) literature. You can enjoy different things with different formats.

## Unit 7. The Power of Poetry

Poems help people think and feel different things. By reading poems, people can think and feel (1) differently than (2) normal. This is good because it helps people (3) understand themselves and others better. A good example of this is a poem by Shel Silverstein called “Early Bird.” It’s about a (4) well-known (5) proverb: “The early bird catches the (6) worm.” This proverb tells us that it is good to be early for things because we’ll get good things before others who are late.

By the end of “Early Bird,” the poem makes us (7) consider what (8) happens to the worm in the proverb. The poet makes us (9) reflect on this with his writing. Worms live (10) underground. A worm that is living under the ground and comes up to the (11) surface early in the morning is in danger. It will (12) probably get picked up by a bird for (13) breakfast. But another worm sleeps late and remains under the (14) soil. It continues living safely and happily.

The poem is a good example of how to (15) appreciate poetry.

**Unit 8. A Positive Thinker: *Anne of Green Gables***

*Anne of Green Gables* was (1) written by L. M. Montgomery in Canada. It was first published in 1908. It is a story about an (2) orphan girl who helps change the lives of people around her.

The story (3) begins with an (4) elderly man, Matthew, and woman, Marilla. They live together on their (5) farm which is called Green Gables. They want to (6) adopt a boy to help them on the farm. They are (7) disappointed when a girl (8) arrives (9) instead. At first, they want to send Anne back to the orphanage. However, Anne is interesting, so Matthew and Marilla decide to wait.

Anne has a (10) positive (11) attitude. She can find good in any situation. Anne says, "You can always enjoy things if you make up your (12) mind (13) firmly that you will." After (14) spending just one day with Anne, Matthew and Marilla decide to have Anne stay at Green Gables. That (15) decision changes all three of their lives for the better. They are filled with love, happiness, and appreciation.



## Unit 9. Digital Money

People usually carry around (1) cash, (2) checks, (3) coins, and cards to (4) pay for things.

They have used these (5) methods to pay for things for a very long time. But recently, people carry less cash, checks, and coins than before.

(6) Increasingly, people are using only cards and online (7) banking. By using only cards, people carry less (8) paper money and coins. But they still need to bring their cards with them.

(9) Another type of (10) digital money is through online payment companies. Of course, banks have (11) websites and apps. But there are online payment companies, like PayPal, that are used to pay for things. People can get, save, and spend money without ever seeing or touching it. They also don't have to carry around anything but their smartphone.

Very recently, an even newer form of digital money has (12) emerged. It is called crypto-currency. The number of people and businesses who (13) accept digital money is (14) increasing. But people are worried about (15) security. They want to be sure that their digital money is safe.

## Unit 10. The History of Money

How we pay for things has changed a lot throughout history. Humans have tried to make paying for things easier and easier. This continues on today.

A long time ago, people (1) exchanged (2) goods and (3) services to pay for things. They exchanged something (4) valuable they had for something (5) else they needed or wanted. However, this only worked if both people wanted what the other person had. So, (6) eventually, (7) commodities became money. Commodities are things that most people need, such as cows, plants, (8) salt, and (9) cloth.

Then, about 3,300 years ago, metal coins were (10) introduced as money. The value of each coin was (11) stamped on it. Coins made paying for things easier. Everyone easily understood the value of coins. Also, coins (12) tend to (13) last a lot longer than many commodities.

Around 800 CE, paper money was made. Paper is lighter than coins and is very easy to (14) transport. Today, people still use paper money and coins. They also use cards and digital money now. Money continues to become more (15) convenient.

## Unit 11. The Stock Market

The (1) stock (2) market is a place where people buy and sell stocks. Stocks are small (3) parts of a company that people can (4) buy, (5) own, and (6) sell. Businesses and people go to the stock market to (7) cooperate and try to make money together.

For many people, their (8) goal is to buy a stock and wait for its value to (9) increase. Then they sell it later for (10) profits. These people are called (11) investors. In the stock market, the values of stocks go up and down every day. Investors can sell their stocks at any time. They try to choose the best time to sell for profits.

The stock market is good for businesses, too. (12) Companies who have many investors can do things like create newer and better goods and also (13) hire more workers. This helps them to make profits. They use money from investors to (14) improve their company and make it more (15) valuable. This is how companies and investors work together to try to make profits in the stock market.

## Unit 12. Credit Cards

Credit cards are small (1) plastic cards that can be used to buy things. Only (2) adults who earn money can get a credit card. It's important to understand how credit cards (3) work.

That way, people can be (4) smart with their money.

Credit companies have money. When a person uses a credit card, they (5) borrow the credit company's money. The (6) amount of money that the credit company borrows must be (7) paid back by the person who owns the credit card. The amount that is (8) due usually has to be paid in about thirty days. They can pay the whole amount when it is due, or pay in small amounts over time with (9) interest.

There are two (10) fundamental ways to use a credit card: (11) offline and (12) online. To pay offline, people put their card in a machine. When the card is used, the credit company pays the (13) bill. To (14) purchase things online, people type in their card number, password, and other information.

It's important to be (15) responsible when using a credit card.

## Unit 13. The Math of Faces

Almost everyone has different (1) facial (2) features. We see and (3) analyze the space between a person's eyes, the shapes of their nose, and other different sizes and shapes on a person's face. Most people do this without really thinking about it. Computer programs can recognize these differences in people's faces, also. Actually, computers can do this much better than humans can. Facial (4) recognition programs are used in many places and they are very helpful.

These computer programs (5) record the geometry of the human face. Geometry is the type of math that studies shapes and sizes. Facial geometry (6) measures many things. For example, it measures the (7) exact (8) distance between the eyes, the size of the eyes, the (9) width of the mouth and nose, and more. Many measurements are taken. Together these measurements make a person's (10) individual (11) profile.

Facial recognition programs can (12) identify people in a (13) crowd. They are used for security at airports and in other important places. This (14) technology also helps people to (15) unlock their phones and even buy things.

## Unit 14. Cooking with Math

Using math can (1) aid us in real life, (2) particularly in the (3) kitchen.

Let's say you want to make cookies for twenty people. The cookie (4) recipe you have only makes ten cookies. If you know how to (5) add (6) fractions, you can follow this recipe and make twenty cookies.

The recipe says you need 1 cup of (7) flour,  $\frac{1}{2}$  cup of sugar,  $\frac{1}{2}$  cup of butter,  $\frac{3}{4}$  cup of chocolate chips, 1 spoon of vanilla,  $\frac{1}{2}$  spoon of baking (8) powder, and 1 egg. Add fractions to (9) double the recipe.

Start with the (10) whole numbers:  $1 + 1 = 2$ . So you need 2 cups of flour, 2 eggs, and 2 (11) spoons of vanilla.

Next are the  $\frac{1}{2}$  fractions:  $\frac{1}{2} + \frac{1}{2} = \frac{2}{2}$ , and  $\frac{2}{2} = 1$ . So you need 1 cup of sugar, 1 cup of butter, and 1 spoon of baking powder.

(12) Finally,  $\frac{3}{4}$  cup of chocolate chips:  $\frac{3}{4} + \frac{3}{4} = \frac{6}{4}$ , and  $\frac{6}{4} = 1 \frac{2}{4}$ .  $\frac{2}{4} = \frac{1}{2}$ , so you'd need  $1 \frac{1}{2}$  cups of chocolate chips.

Adding fractions can help with those (13) tricky (14) culinary (15) calculations.

## Unit 15. Measurement Systems

Today, there are two (1) widely used systems of measurement around the world. They are the (2) metric system and the (3) imperial system. The imperial system is older, and long ago it was the most widely used system. But later the metric system was (4) introduced. (5) Currently, most of the world uses that system. It uses measurements like (6) kilometers and kilograms. However, some (7) countries continue to use the imperial system. It uses measurements like (8) miles and (9) pounds. America is one of those countries.

(10) Unfortunately, this caused (11) trouble for the American space (12) agency, NASA. In 1998, NASA sent a (13) spaceship to Mars on a mission. While building the spaceship, NASA used the metric system. This made working with other countries easier. But one of the American companies NASA worked with didn't (14) consider this. That company made an important computer program for the spaceship. They used imperial measurements, but all of the other programs and calculations used metric measurements. As a result, the ship crashed on September 23rd, 1999, and the mission (15) failed.

## Unit 16. Measuring Big Animals in the Wild

Some things are easy to measure. Just use a simple (1) tool, and read the measurement.

But a big animal, like a (2) whale in the (3) ocean, can't be measured (4) easily. Scientists need to find (5) creative ways to use math to measure these big animals.

To measure whales, scientists usually start by studying (6) dead ones. Sometimes, the body of a dead whale (7) washes up on a beach. Scientists do (8) manual measurements of these animals. To do this, scientists use tools like a measuring tape or a (9) scale.

After measuring many dead whales, and (10) collecting a lot of information, scientists can (11) figure out the (12) approximate (13) proportions of a whale. Scientists use this information to know about the size of living whales.

They also take pictures of animals they want to study. They take as many pictures as they can. They try to collect as much information as they can about the animal. Then they make an (14) estimate of the (15) length and weight of the animal.

Scientists use math creatively to measure big animals.