Right Brain, Left Brain

What do Leonardo da Vinci, Paul McCartney, and Julia Roberts have in common? They are all left-handed. Today about 15 percent of the population is left-handed. But why are people left-handed? The answer may be in the way the brain works. Our brain is like a message center. Each second, the brain receives more than a million messages from our body and knows what to do with them.

People think that the weight of the brain tells how intelligent you are, but this isn't true. Albert Einstein's brain weighed 1,375 grams, but less intelligent people may have heavier brains. What is important is the quality of the brain. The brain has two halves—the right brain and the left brain. Each half is about the same size. The right half controls the left side of the body, and the left half controls the right side of the body. One half is usually stronger than the other. One half of the brain becomes stronger when you are a child and usually stays the stronger half for the rest of your life.

The left side of the brain controls the right side of the body, so when the left brain is stronger, the right hand will be strong and the person may be right-handed. The left half controls speaking, so a person with a strong left brain may become a good speaker, professor, lawyer, or salesperson. A person with a strong left brain may have a strong idea of time and will probably be punctual. The person may be strong in math and logic and may like to have things in order. He or she may remember people's names and like to plan things ahead. He or she may be practical and safe. If something happens to the left side of the brain, the person may have problems speaking and may not know what day it is. The right side of his or her body will become weak.

When the right side of the brain is stronger, the person will have a strong left hand and may be left-handed. The person may prefer art, music, and literature. The person may become an artist, a writer, an inventor, a film director, or a photographer. The person may recognize faces, but not remember names. The person may not love numbers or business. The person may like to use his or her feelings, and not look at logic and what is practical. If there is an accident to the right side of the brain, the person may not know where he or she is and may not be able to do simple hand movements.

This does not mean that all artists are left-handed and all accountants are right-handed. There are many exceptions. Some right-handers have a strong right brain, and some left-handers have a strong left brain. The best thing would be to use both right and left sides of the brain. There are people who learn to do two things at the same time. They can answer practical questions on the telephone (which uses the left brain) and at the same time...
play the piano (which uses the right brain), but this is not easy to do!

Let's Face It

Some people believe that the shape of a person's face shows the general character of the person. The Chinese believe that there are eight basic shapes of the face, and each shape shows a special character. The shapes are round, diamond, rectangle, square, triangle, narrow forehead and wide jaw, wide forehead and square chin, and wide forehead and high cheekbones. Here is what people say about these shapes.

Round faces have high and flat cheekbones, flat ears, wide noses, and strong mouths with thin lips. People with round faces are very intelligent, and they prefer to work with their brain instead of their body. People with round faces are confident and usually live a long life. Many movie stars and famous women have diamond faces. The diamond face is narrow at the top and has a pointed chin. The Chinese believe that it is lucky if you meet a man or a woman with a diamond face before you go to an important meeting. People with this type of face are generally lucky in love and in their jobs. They may not be happy when they are young, but they get what they want later in their lives. People with diamond faces are warm, but they have a strong will.

People with rectangular faces control their feelings, but they are intelligent and creative. These people work hard and are very reliable. Their work is very important to them and comes before everything else, even family. They are not easy to be around when they do not feel free or when they feel bored. Many people with rectangular faces are at their best when they are older.

Square faces usually belong to men, but women can also have them. Men with this kind of face are good at making decisions and keeping to them. They are generous and honest. They put their friends first in everything. Both men and women with square faces are lucky and live a long life.

A wide forehead, high cheekbones, and a pointed chin make a triangular face. People with triangular faces are lively and intelligent and often stand out from others; however, they worry too much and their emotions are fragile, so they can get depressed easily. Because of this, they do better in jobs where they work with people.

The Chinese believe that a person with a wide jaw and narrow forehead is like the Earth and changes little. People with this kind of face love success and will almost always get what they want, especially money and all that it brings. A man with this kind of face will not be close to his children, but his children will respect his strength. A woman with this kind
of face was Jacqueline Kennedy, who had a strong character even in difficult times.

People with wide foreheads and square chins are intelligent and work hard to get
what they want. They can be calm and quiet, or they can be the opposite, too, because
they like to get attention. Famous movie people like Paul Newman and Jane Fonda have this
kind of face; so did Picasso, the painter. They usually have a long life and save their energy
for important times in life.

People with wide foreheads and high cheekbones show strong character and a lot
of energy. This helps them to be normal again, if something bad happens. They know what
they like and don't like to change their habits. Nevertheless, they like to live a full life.

Live a Little: Eat Potatoes!

Can you imagine life without French fries? Potatoes are very popular today. They
are the fourth most important crop in the world, after wheat, rice, and corn. But in the past,
potatoes were not always popular. People in Europe started to eat them only 200 years ago!

In the 1500s, the Spanish went to South America to look for gold. There, they found
people eating potatoes. The people of Peru in South America had been eating potatoes for
7,000 years! The Spanish brought the potato back to Europe with them. But people in
Europe did not like this strange vegetable.

Some people thought that if you ate potatoes, your skin would look like the skin of
a potato. Other people could not believe that you ate the underground part of the plant, so
they ate the leaves instead. This made them sick because there is poison in the leaves.
Others grew potatoes for their flowers. At one time in France, potato flowers were one of the
most expensive flowers. Marie Antoinette, the wife of King Louis XVI, wore potato flowers in
her hair.

Around 1780, the people of Ireland started to eat potatoes. They found that potatoes
had many advantages. The potato grew on poor land, and it grew well in their cold and rainy
climate. It gave more food than any other plant, and it needed little work. All they had to do
was to plant the potatoes, and then they could do other work on the farm. On a small piece
of land, a farmer could grow enough potatoes to feed his family. A person could eat
8 to 10 pounds of potatoes a day, with some milk or cheese, and be very healthy. Soon,
potatoes became the main food in Ireland. Then, in 1845, a disease killed all the potatoes in
Ireland. Two million people died of hunger. Many Irish who did not die came to the United
States at this time. Over a million Irish came to America; one of them was the great-
grandfather of John F. Kennedy.
In other parts of Europe, people did not want to change their old food habits. Some preferred to die of hunger rather than eat potatoes. In 1774, King Frederick of Germany wanted to stop his people from dying of hunger. He understood that potatoes were a good food, so he told the people to plant and eat potatoes or else his men would cut off their noses. The people were not happy, but they had no choice and so started to eat potatoes. Today, people in this part of Germany eat more potatoes than any other nationality. Each person eats about 370 pounds of potatoes every year!

Today, many countries have their own potato dishes. Germans eat potato salad, and the United States has the baked potato. And, of course, the French invented French fries. Now French fries are popular all over the world. The English eat them with salt and vinegar, the French eat them with salt and pepper, the Belgians eat them with mayonnaise, and the Americans eat them with ketchup.

Bugs, Rats, and Other Tasty Dishes

Would you like some chicken feet? How about frogs' legs? Well, you can't say no to a 50-year-old egg! It's a delicacy that people pay a lot of money for, believe it or not. People in different parts of the world eat just about everything, from elephants' trunks to monkeys' brains.

Chicken feet are a favorite appetizer in China, while in Taiwan turkey feet are a favorite. In Taiwan, people have both chicken feet and turkey feet in their salads. Whereas Americans like the white meat of a chicken, people in Taiwan prefer other parts of the chicken, like the dark meat and the inside parts. They often deep-fry the skin and serve it separately, along with the main meal.

Snakes and eels are delicacies in most parts of the world. In France and England, fish shops sell eels that are alive. In Asia, there are special restaurants for eating snakes. Everything on the menu is snake: snake soup, snake appetizers, snake main course, and snake desserts! When you go to the restaurant, the snakes are alive. You choose the snake you want to eat. Then the waiter kills the snake before your very eyes!

People line up in front of restaurants in Malaysia, Singapore, Thailand, and Indonesia to get fish heads. The restaurants prepare the whole fish, but people start by eating the head, which they believe is the tastiest part of the fish. So many people ask for fish heads that the price of fish heads is higher than the price of the best steak.

What about eating a fish that can kill you? The Japanese put their lives in danger
every time they eat this delicacy. The fish is called the blowfish, and it is very poisonous. Although they know that they could die, they continue to eat it. Every year, the Japanese eat 20,000 tons of blowfish, and 70 to 100 people die from it every year.

Rats and mice are also a special food in some parts of the world. In China, people like rice rats especially. They clean and salt them and leave them in oil. Then they hang them to dry. These rats sell in the market for twice the price of the best pork. Farmers in Thailand and the Philippines also love rice rats. In Vietnam, mice from the rice fields are fried or grilled. In Spain, there is a traditional dish called paella, which is made with rice and pieces of fish. In the town of Valencia, this dish also has rat meat to give it a special flavor.

Insects like termites, ants, and bees are delicacies to many people. In Africa, people fight over termite nests. They eat the termites alive and say that they taste like pineapple. In India, people make the ants into a paste and eat them with curry. In Borneo, people mix ants with rice. They say that the ants give the rice a special flavor. In Australia, the native people drink ants. They mash them in water and say that the drink tastes like lemonade! And bees are delicious when you fry them. You just can't stop eating them!

**Tihar: Festival of Lights**

Tihar is one of the most important festivals for Hindus in Nepal. Nepal is a small country between India and China. It has a population of about 23 million, most of whom are Hindu. The festival of Tihar takes place in late autumn and lasts for five days. This festival is also called the festival of lights. It is a time when all the houses light oil lamps, and the city is full of lights and decorations. This festival is about worshipping different animals such as the crow, the dog, and the cow. During Tihar, the people also worship their brothers and sisters and the goddess of wealth, Laxmi.

On the first day of the festival, people worship crows. Every family cooks a delicious meal in the morning. Before they eat, each member of the family puts some food on a plate of leaves and places it outside for the crows to eat. People believe crows are the messenger of the Lord of Death. They worship crows to keep sadness away.

The second day, people worship dogs. They decorate dogs with garlands of flowers around their necks. They give dogs delicious food and put a red **ilka** (a special powder) on their foreheads. They even do this to stray dogs. It is a day to respect all dogs. They pray for the dogs to guard their homes. Dogs with garlands of flowers can be seen everywhere.
The third day is the most important day of the festival. Early in the morning, people start to worship the cow. The cow is the symbol of wealth and is the most holy animal for Hindus. They put tika on the cows' foreheads and a garland of flowers around their necks. They give the cows nice things to eat. People place the cows' manure in different parts of their houses. Later, in the evening, they worship the goddess Laxmi. If people please the goddess, she will give them wealth. People clean and decorate their houses. They put oil lamps in every door and window. A female member of the family performs a special ceremony or puja. She then puts a red mud footprint on the floor entering the home and makes a trail to the room where the family worships the goddess. In this room, there are pictures and an icon of the goddess.

There is also a money box where each year the family puts money away for the goddess. In the evening, girls go from door to door of their neighbors' homes and sing songs of the goddess. They receive gifts in return. The fourth day is a little different. The things people worship on this day depend on their cultural background. Most people worship the ox. They put tika on the oxen and a garland around their necks. They also give them delicious food. Other people make a small hill out of cow manure, put some grass on it, and perform a special ceremony, or puja, on it. Yet other people worship themselves.

The fifth day is the day of brothers and sisters. Sisters wish their brothers long life and prosperity. If you do not have a brother or sister, you can make one of your relatives or friends a brother or a sister. On this day, sisters will perform a puja and apply a special tika on their brothers. Then they put garlands around their brothers and give them special gifts of food. Brothers in return honor their sisters; they put garlands around their necks and give them gifts of clothes and money.

This festival finally ends after five days of cooking, decorating, eating, singing, dancing, shopping, relaxing, gift giving, and worshipping. There is no doubt that Tihar is the most popular festival in Nepal.

Turning Fifteen: Ceremony and Celebration

A quinceañera (pronounced uKEEN-saye-an-YEH-raU) is a special celebration held for many girls in Spanish-speaking communities of the United States and in Latin America on their 15th birthday. The celebration may be different in different countries. The word quinceañera can refer to the celebration or to the girl. This birthday is special because it celebrates that a girl is not a child anymore and has become a woman. It is a very important day for many young girls, a day they dream about for a long time. Everyone who knows the
girl will celebrate it with a church ceremony and a big party.

There is a lot of preparation before a quinceañera celebration. The most 10 important and expensive thing is the girl's dress. The dress is like a bride's dress but is usually pink; however, today many girls wear dresses in other light colors, also. The birthday girl chooses 14 girls and 14 boys who will be her attendants at the ceremony and the dinner dance that follows. Traditionally, these girls and boys are younger than the birthday girl, but sometimes they are the same age. The dresses for the girls must be in the same color and style, just as the suits for the boys are in the same color and style. The reason for this is that all eyes will go to the birthday girl on that special day. Then the family orders a cake that is special like a wedding cake. Sometimes the godparents pay for it. Many times, the cake is so big that it needs a special 20 table.

Next, the parents rent a hall for the party and rent a band to play music. After that, they decide on the special food to serve the guests. Often a quinceañera celebration can cost as much as a big wedding; the size of the party depends on how much the girl's parents can afford.

On the night before the girl's 15th birthday, a band plays in the evening 25 outside her window. Then the day of her birthday arrives. First, the girl's family, her godparents, and her attendants go to a religious ceremony in the church. The girl receives a bouquet of flowers and blessings and - prayers that will help her to live a strong life. Her parents are proud of their grown-up daughter, and they embrace her. Then she leaves the church with 30 her attendants and goes to the hall for the special party. Before they go to the party, they pose for photographs.

The hall is beautifully decorated with flowers, and it is full of guests. They wait for the girl and her family to arrive. The band plays music, and the party begins with a dinner. After the dinner, the girl dances the first dance with her father. Then the other attendants start to dance, followed by the guests. Everyone has a good time, and they all dance until midnight. It is a day she 35 will always remember.

**Louis Invents Braille**

Louis Braille was born near Paris, France, in 1809. When he was a little boy, Louis loved to play with his father's tools. One day, when he was four, he was playing with his father's tools when a sharp tool went into his left eye. An infection started in his left eye and went to the other eye. He was unlucky. A few weeks later, Louis was blind. When Louis was 10, his parents took him to a school for blind children in
Paris. Louis lived at the school. He was a good student and looked forward to the day when he could read. The school had some books that blind people could read. These books had letters that stood out. He had to feel each letter with his fingers. There was one sentence on each page. just one part of a book weighed 20 pounds. A whole book weighed 400 pounds! By age eleven, Louis had read all 14 books in the school. He wanted to read more, but there were no more books. So every evening, he tried to find a way for blind people to be able to read books. One day, Captain Charles Barbier, a French soldier, came to speak at the school. Barbier had invented night writing. This system used dots for the letters of the alphabet. Soldiers could feel the dots with their fingers and read with no light. Barbier thought night writing could also help blind people.

Barbier's system was difficult, but it gave Louis an idea. He worked night after night to make a simple system with dots. By age 15, he had finished his system. He showed it to other students in the school, and they loved it. They called it Braille, after him. At age 17, Louis graduated from the school and became a teacher there. In his free time, he copied books into Braille. Someone read to Louis while he made the dots. He copied the books of Shakespeare and other writers into Braille. The students read all the books and wanted more. The school did not want a 15-year-old boy's invention to be better than their own heavy books and would not let students read Braille books. Nevertheless, the students continued to read them. Finally, after 20 years, the school agreed to use Braille.

Louis Braille spent the rest of his life trying to tell the world about Braille. But nobody cared. Louis was unlucky again. He became very sick. Even when he was sick in his bed, he continued to write books in Braille for the students at his school. A few years later, Louis Braille died at age 43. Two years after he died, schools for the blind began to use his system.

Today, we use Braille not only to write words in all languages but also to write math and music. Blind people send Braille greeting cards, wear Braille watches, type on Braille keyboards, and take elevators with Braille controls. Louis Braille had no idea how many people he had helped. On the door of the house where he was born are the words, "He opened the doors of knowledge to all those who cannot see."
Hetty Robinson was born in 1834. When her parents died, she was 30 years old. They left her $10 million ($185 million in today's dollars). She was very good at business and soon made more money. Hetty was famous as the richest woman in the United States, but she was also famous because she was very stingy. Even when she was young, she was stingy. For instance, on her 21st birthday, she refused to light the candles on her birthday cake because she did not want to waste them. The next day, she cleaned the candles and returned them to the store to get a refund.

Hetty always thought men wanted to marry her for her money. Finally, at the age of 33, she decided to get married because she did not want her relatives to get her money. She married Edward Green, who was a millionaire. They had a son and a daughter. Soon after, Hetty divorced him because she did not agree with him about money matters.

Hetty was even stingy with her own children. For example, when her son hurt his knee in an accident, Hetty did not call a doctor. She tried to take care of it herself. When her son's knee didn't get better, she dressed him in old clothes and took him to a free clinic. The doctors recognized her and asked for money. Hetty refused to pay and took her son home. The boy did not get medical treatment, and a few years later his leg was amputated.

Hetty was stingy with herself, too. For example, she always wore the same black dress. As the years passed by, the color of the dress changed from black to green and then brown. When the dress became dirty, she went to a cheap laundry and told them to wash only the bottom where it was dirty, and she waited until it was ready. Her undergarments were old newspapers she got from the streets. She rented a cheap apartment with no heat in New Jersey because she did not want to pay taxes in New York. Then she traveled on the train to her office in New York. Her office was a space in a bank, which the bank gave to her for free. All she ate was raw onions and cold oatmeal.

She was too stingy to spend money to heat her food. Sometimes, to heat her oatmeal, she put it on the office heater because that was free. She also ate cookies, but regular cookies were too expensive for her, so she walked a long
way to get broken cookies, which were much cheaper. One time, she spent half the night looking for a two-cent stamp.

When Hetty Green died in 1916, she had no friends. She left more than $100 million (over $17 billion today) to her son and daughter. Her son and daughter were not stingy like Hetty, and they spent the money freely.

**Lightning**

**Track 9**

Every second of every day, all over the world, there are more than 100 **lightning bolts**. That's about ten million lightning bolts in one day! Lightning **amazes** us, but it can also **frighten** us. We have good reason to be afraid of lightning. Every year, about 100 people in the United States and Canada die from lightning, and another 300 are **injured**. It is strange that of all the people who die from lightning, 84 percent are men. Lightning is the main cause of forest fires; it starts more than 9,000 fires each year.

Lightning is electricity inside a cloud. Scientists do not know exactly what makes this electricity. But they know that the electricity inside a cloud can be as much as 100 million volts. From this extremely strong electricity, a lightning bolt, like a streak of bright light, comes down from the sky. Its temperature can reach 50,000 degrees Fahrenheit within a few millionths of a second. That's almost five times the temperature on the sun's surface. The lightning bolt is very quick. It can move at a speed of 87,000 miles per second. With the lightning bolt, we usually hear thunder, which is the sound of hot air **exploding**. Lightning and thunder happen at exactly the same time, but we see lightning first because light travels a million times faster than sound.

Lightning often strikes tall buildings. However, many buildings have **lightning rods** to **protect** them from lightning. When lightning strikes, the electricity goes safely down the metal rod to the ground. Benjamin Franklin, the American statesman, invented the lightning rod in 1760. That is why buildings like the Empire State Building in New York City are safe. Lightning may hit this building as many as 12 times in 20 minutes and as often as 500 times a year. Airplanes are not as easy to protect as buildings, and accidents do happen. In 1963, a Boeing 707 jet was hit by lightning and crashed. Eighty-one people died.
If you see thunder and lightning coming, here are some things you can do to protect yourself. Go inside a house, get into a car, or go under a bridge. If you cannot find shelter, go to the lowest point on the ground. If you are outside, remember that trees attract lightning, especially tall trees. Never go under a tall tree that stands alone. If you are in a field, drop to your knees, bend forward, and put your hands on your knees. Do not lie down because the wet ground can carry lightning. Stay away from a lake, an ocean, or any other water. Don't touch or go near anything metal, such as a metal fence, golf clubs, and bicycles, because metal attracts lightning very quickly. Don't use a telephone except in an emergency.

They say that lightning never hits the same place twice, but this is not true. One man, Roy Sullivan, was hit by lightning seven different times in his life. He was injured each time but did not die. He died in 1983, but not from lightning. He killed himself because he loved a woman, but she didn't love him!

**Killer Bees on the Attack**

**Track 10**

Killer bees started in Brazil in 1957. A scientist in Sao Paulo wanted bees to make more honey, so he put 46 African bees in with some Brazilian bees. The bees started to breed and make a new kind of bee. However, the new bees were a mistake. They did not want to make more honey; they wanted to attack. Then, by accident, 26 African bees escaped and bred with the Brazilian bees outside.

Scientists could not control the problem. The bees spread. They went from Brazil to Venezuela and then to Central America. Now they are in North America. They travel about 390 miles a year. Each group of bees, or colony, grows to four times its old size in a year. This means that there will be one million new colonies in five years.

Killer bees are very dangerous, and people are right to be afraid of them. When killer bees attack people, they attack in great numbers and often seriously hurt or kill people. Four hundred bee stings can kill a person. A total of 8,000 bee stings is not unusual for a killer bee attack. In fact, a student in Costa
Rica had 10,000 stings and died. Often, the bees attack for no reason. They may attack because of a strong smell that is good or bad or because a person is wearing a dark color, has dark hair, or is wearing some kind of shiny jewelry. What can you do if you see killer bees coming toward you? The first thing you can do is run—as fast as you can. Killer bees do not move very fast, but they will follow you up to one mile. Then you must go into the nearest house or tent. Do not jump into water. The bees will wait for you to come out of the water. Killer bees will try to attack the head or the face, so cover your head with a handkerchief or a coat. You may even take off your shirt and cover your head. Stings to your chest and back are not as dangerous as stings to your head and face. However, if the bees sting you many times, you must get medical attention immediately.

How are killer bees different from normal honey bees? Killer bees are a little smaller than regular bees, but only an expert can tell the difference. Killer bees get angry more easily and attack more often than honey bees. Killer bees attack and sting in great numbers. Like honey bees, each killer bee can sting only one time, and the female bee dies after it stings. Killer bees also make honey, but a honey bee makes five times more honey than a killer bee.

Up to now, killer bees have killed about 1,000 people and over 100,000 cows in the Americas. In the United States alone, five people have died from killer bee stings since 1990. The first American died from bee stings in Texas in 1993. From Texas, the bees moved to Nevada, New Mexico, Arizona, and then Southern California. Where will they go next?

@ A Yahoo! Is Born

Track 11

The year was 1994. David Fila and Jerry Yang were both students at Stanford University in California. They were studying engineering and lived in a trailer on campus. David and Jerry were like most students. They loved to work on their favorite hobby. But their hobby was very different from others. It became a billion-dollar company! It changed the way people communicate with each other, find information, and buy products on the
Internet.

David and Jerry didn't always like to study. One day they were both bored, so they decided to play around with the Internet. They found some good Websites. But there was so much information on the Internet! So they developed a way to find and keep track of all their favorite Websites. First they had long lists of Websites. Later on, they separated them into categories. Even these started to become big again, so they separated the categories into more groups. In the beginning, they called their new system "Jerry and David's Guide to the World Wide Web."

Later, David and Jerry changed the name of "Jerry and David's Guide to the World Wide Web" to "Yahoo!" They liked the word because it means someone who is rude, rough, and without good manners. They thought it was funny. They put their Yahoo! on two student computers. Part of it went on Jerry's computer, "Akebono." The other part went on David's computer, "Konishiki." They were the names of two famous sumo wrestlers.

After a while, students, friends, and others started to use Yahoo!, and they loved it. Soon, hundreds of people outside Stanford University's campus were using it. They told other students and friends about it. In a short time, thousands of people were using it. By the autumn of 1994, almost 100,000 people were using this great new invention.

David and Jerry were working 20 hours a day, but they didn't care. They had fun and loved what they were doing. But as Yahoo! became more and more popular, David and Jerry became serious about their product. They felt they were offering a service people really wanted. They began to realize that this was something special and could be a great business.

David and Jerry got all the papers necessary to have their own company. Then they went to other people and businesses and asked them for money to start their new company. Finally, a business called Sequoia Capital gave them almost two million dollars.

David and Jerry believed in their idea. They hired some people to help them. The company grew quickly. Today, hundreds of millions of people around the world use Yahoo! There are Yahoo! offices in Europe, Asia, Latin America, Australia, Canada, and the United States. Over 12,000 people are working for Yahoo! worldwide. The main offices are in Sunnyvale, California. Yahoo! still helps people find information, but the company does many
other things too. It offers many Internet services such as e-mail, instant
messaging, Websites, blogging, advertising, and other business uses. Today,
Yahoo! Mail is the largest e-mail service in the world. Yahoo! has its products
in over 20 languages around the world. That's a long way from a hobby in a
student trailer. Think about how many times you have used Yahoo!

Biotechnology: Changing
Track 12

Living Things

People use biotechnology to change living things. Biotechnology creates
new animals, plants, foods, medicines, and materials. People have used
biotechnology for thousands of years. They have created new plants, animals,
and microbes! that make cheese, yogurt, bread, beer, and wine. Biotechnology
advanced very quickly when DNA was discovered in 1953. Every living
cell has DNA. DNA is made up of genes. Today, scientists who work in
biotechnology can change genes and change living cells.
Farmers have been changing the genes of crops like corn, wheat, and
rice for thousands of years, and today we grow better and better crops. As the
world population is increasing, we need more and more food. In the 1960s,
food scientists made new kinds of crops like corn, wheat, and rice. These crops
grew faster, bigger, and were more resistant to disease. For example, in 1992
an American company changed the genes in some cotton plants. The change
made the leaves poisonous to certain kinds of insects that eat cotton plants,
but nothing else. In this way, farmers grow more crops and do not need to use
harmful insecticides.

Our fruits and vegetables are also changing. When we go to the
supermarket today, we may see many kinds of tomatoes. They have different
colors and sizes. Some tomatoes are long-life types, meaning they stay fresh
longer. They are red and have a perfect shape, but they don't get soft. These
tomatoes have had their genes changed. We do not know if changing the
genes of plants we eat will be good for our health. Likewise, we do not know
what will happen to other natural plants that grow near these plants.
People have bred animals for thousands of years and have created
different breeds of domestic animals. For example, we breed horses for horse
racing and cows that give more milk. Scientists have sped up the process in
the last 20 years. They have created animals that are useful to humans. In
'microbe: a very small living cell that can be seen only with a microscope
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1994, scientists in Australia invented a way of removing the wool from sheep
without cutting it off. They gave the sheep a special hormone and wrapped
a helmet around them. After three weeks, they could peel off the wool by
hand. Scientists have used pigs to help humans receive heart transplants.
Pigs and humans have different genes. However, the heart of a pig is similar
to the human heart in size and shape. Scientists put human genes into pigs.
This makes it possible for the human body to accept the heart of a pig in a
transplant operation.
Scientists are also using biotechnology to clean up dangerous places.
When oil from ships or factories spills into the sea, it is poisonous. The
poisons endanger plants and animals in the area. The poisons can also
be passed on to the food we eat. Certain microbes can break up the oil. In
laboratories, scientists now grow microbes that can digest or break up the
oil. In 1999, scientists in the United States developed a new microbe that eats
waste material at nuclear sites and makes the sites less harmful. Sometimes
there is too much arsenic, a poison, in the ground. A little arsenic is fine, but
too much is dangerous to plants, animals, and people. Scientists have now
created a plant that sucks up the arsenic from the ground.
There are more bio-inventions, and there will be many more bio-inventions
in the future

Flowers, Dishes, and Dresses
Track 13
Wedding traditions are different from culture to culture. Most people
follow the traditions of their culture and usually do not know what the
traditions mean. In the past, friends and relatives of the newlyweds wanted
them to be happy and have good fortune or luck. This was the start of
traditions to bring good luck to the couple and the use of good-luck charms.
Many of these traditions still continue today,
To make sure the wedding goes well and the couple will have good fortune,
many people around the world follow the old traditions. In Germany, before
the wedding day, friends and family of the **bride** and **groom** bring old dishes, 
10 They throw the dishes on the floor. The dishes break in front of the bride and 
groom, who then must clean them up. The people all have fun doing this and 
have an *informal* party. This tradition prepares the couple for married life 
and brings them good luck. Similarly, at an English wedding, church bells ring 
when the bride enters the church and walks up the **aisle**. Sometimes there 
15 are flower petals where the bride walks, Likewise, in some countries, there are 
flower petals on the marriage bed to wish the couple happiness in the future. 
The date of the wedding day can be important for a couple's good fortune 
too. There are many traditions about wedding dates, In China the couple may 
see a fortune teller, who will find a favorable day based on the dates when 
the couple was born. In the United States today, no special day or month 
is favorable for weddings, However, June is a popular month. The month 
of June is named after the Roman goddess Juno, She is the goddess of love 
and marriage, On the other hand, in some countries, the day of the week is 
important. For example, in Italy a wedding is usually on a Sunday, but in the 
25 United States it is usually on a Saturday. 

Many countries around the world use good-luck charms for good fortune 
or luck for the bride and to make bad spirits go away. On the wedding day 
in the United States, brides wear white dresses. Some brides follow the old 
tradition of wearing "Something old, something new, something borrowed, 
30 something blue." Each "something" has a special meaning, "Something old" 
*symbolizes* a connection to the bride's family and the past "Something 
new" symbolizes the success and good fortune in the bride's new life. For 
"something borrowed," the bride borrows something from a friend or family 
member and then returns it after the wedding, This symbolizes love and 
support of family and friends. "Something blue" is because the color blue 
stands for *faithfulness*. Likewise, in Norway, a bride wears a white dress, 
However, some brides may wear a traditional crown. The **crown** is silver 
and has charms hanging from it When the bride walks, the charms make 
a beautiful sound, The sound is to tell bad spirits to go away, Similarly, in 
35 Sweden, there is an old tradition for good luck that some people still follow. 
The mother of the bride gives her daughter a gold coin for her right shoe, The 
father of the bride gives her a silver coin for her left shoe. The bride wears the 
coins in her shoes on her wedding day. In this way, the parents hope she will
never be poor, Brides usually wear white in the West; however, in some Asian countries, brides wear red. Red is the color of happiness, good luck, and life. At a Chinese wedding, the bride usually wears a red dress, and sometimes all candles and decorations for the wedding are red too. Similarly, an Indian bride wears a red sari, which symbolizes life and energy. In conclusion, there are many different wedding traditions around the world. Most traditions come from long ago, when people believed in the power of charms and ceremonies to bring good luck and keep bad luck away. Similarly, people today want to celebrate the newlyweds and wish them good fortune and happiness in their new lives.

sari: a dress which is worn by Indian women and made of one long piece material that is wrapped around the body