



May 2012

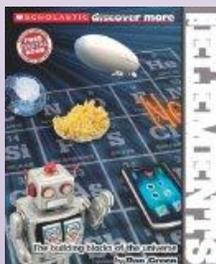
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Great Books for Kids

Learn about the elements on the periodic table with **Scholastic Discover More: The Elements**

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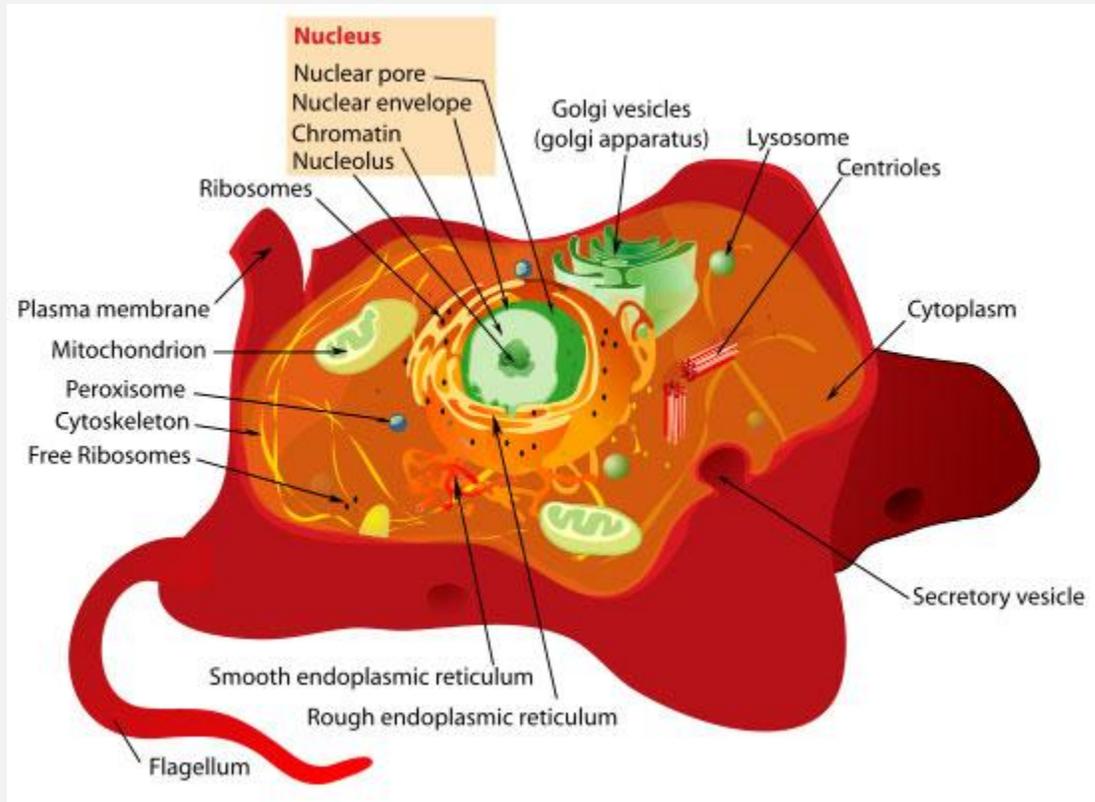


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Parts of a Cell: Organelles

You have learned about many different organelles. Here are some other organelles found in animal and plant cells. Listen to the [Cells Rap](#) and see if you can pick out the names of the different organelles.



Nucleus: this is the brain of the cell. It controls everything that happens. It contains something called DNA. DNA is like a set of instructions to build a plant or animal.

Ribosomes: these organelles are like little factories. They make something called proteins that the cell needs.

Vacuoles: are like storage units. They can store things like food, water and waste products.

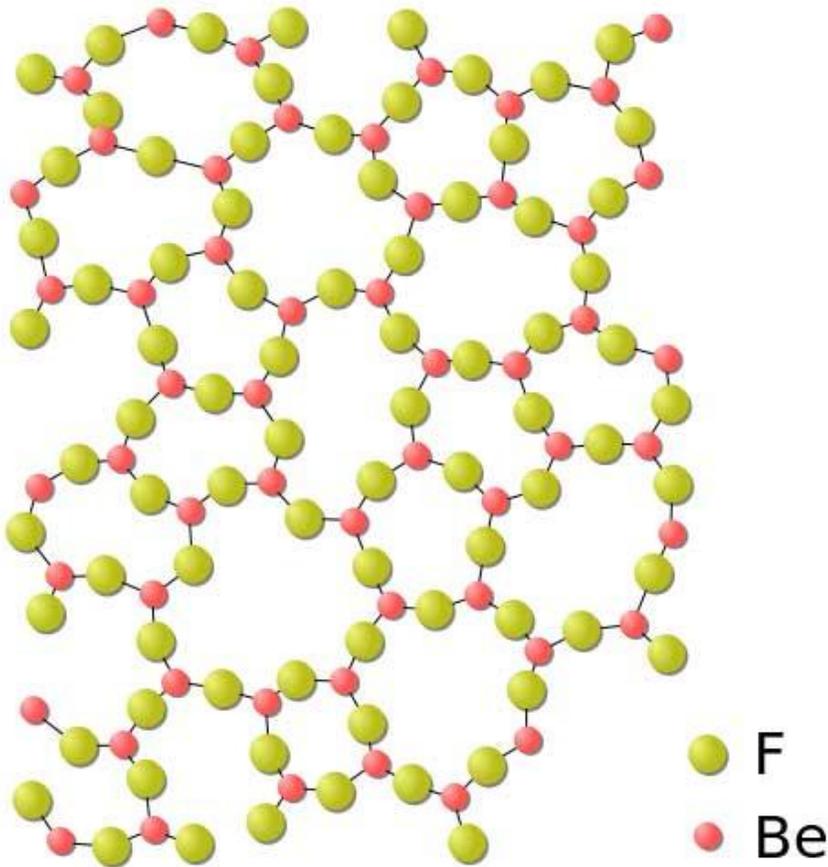
Cytoplasm: a fluid that fills the cell.

Chloroplasts: make food in plant cells. There is chlorophyll inside the chloroplasts. Chlorophyll makes plants green.

Golgi bodies: these organelles are like little delivery trucks. They move things around a cell.

Endoplasmic Reticulum: this is like a bunch of tubes that make and move material the cell needs.

Chemistry Corner



Protons, neutrons and electrons are the parts that make up atoms. Atoms are the building blocks of matter. Just like with Lego blocks, atoms must be able to stick together. This is called bonding. A chemical bond is the force that holds atoms together in molecules.

There are different kinds of chemical bonds. They are:

- Ionic bond
- Covalent bond
- Metallic bond

Atoms use these different kinds of bonds to form molecules. They can also break bonds.

Stars

Proxima Centauri is the closest star
To our sun, yet still very far
The trip would take four years or so
The light we see left that long ago

Sirius is the brightest star
At 8 light years, it's very far
Call it the Dog Star, that is fine
Canopus is next in line

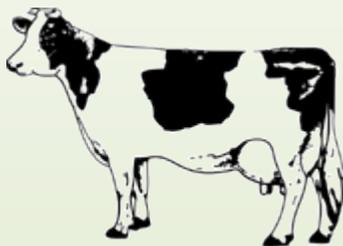
The 10 Brightest Stars



Sirius
Canopus
Alpha Centauri
Arcturus
Vega
Capella
Rigel
Procyon
Achernar
Betelgeuse

Physics Corner

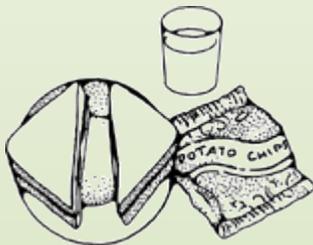
Plants use a process called photosynthesis to make food. They need sunlight, air and water. The sunlight gives the plants energy to grow. So, the energy transfers from the sun to the plants.



Think of a boy eating a turkey and cheese sandwich. The bread is made from wheat. The turkey and cheese come from animals. The wheat grew using energy from the sun. The energy went from the sun to the wheat. The turkey ate food from plants to grow. The energy went from the sun to the plants to the turkey. A cow ate grass to produce milk to make the cheese. So, the energy went from the sun, to the grass to the cow.

When the boy eats the sandwich, the energy from the plants and animals goes into the boy. The food gives the boy a type of energy called chemical energy. The boy will use this energy to play, learn and grow.

The science of physics has many laws. One is called the Law of Conservation of Energy. This law says that the total amount of energy in the universe doesn't change. Energy cannot be created or destroyed. But it can change from one type to another.



Energy comes from the sun in the form of heat and light. Some of that energy is transferred to plants. That energy is then transferred to animals that eat the plants. If those animals are eaten the energy is transferred again to the eater. An animal that eats plants or animals uses that energy to move and grow.

Renewable Energy

We need energy to power buildings, cars and airplanes. Nonrenewable energy is a type of energy we will run out of at some point. Oil is one type of nonrenewable energy. Oil is used to make the gasoline we put into cars. Someday all oil will run out and people will have to find a different way to run cars. Coal and natural gas are also nonrenewable.



Renewable energy is energy we can make over and over again. Renewable energy includes wind power, solar power, hydro power, biomass energy and geothermal energy.

Wind Power

When wind turns the blades of a windmill, it spins a turbine inside a generator. This creates electricity. To make enough electricity for large populations, wind farms are needed. They may have hundreds of windmills. Wind farms are placed in very windy areas.

Solar Power

The word solar means sun. Solar power uses the sun's energy to create electricity. Large solar panels are needed to capture and store the sun's energy. Using the sun to make electricity is called photovoltaics. Solar power is very expensive, so it isn't widely used yet.



Hydro Power

Hydro means water. Hydro power creates electricity using the power of moving



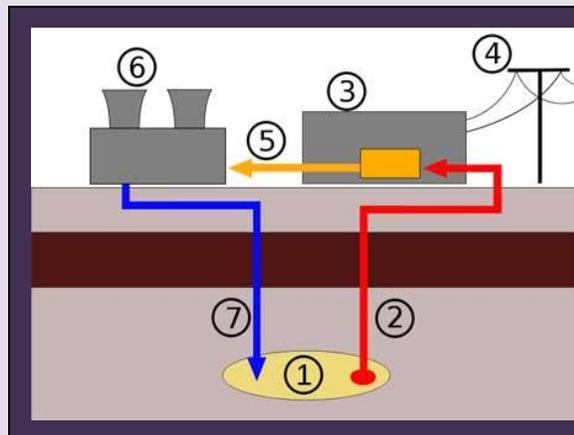
water. Moving water can spin a wheel or blade that spins a turbine inside a generator to make electricity. Dams are often built to create electricity. The force of water moving through a dam spins the blades of huge turbines. A hydroelectric dam can create enough energy to power more than a million homes.

Biomass Energy

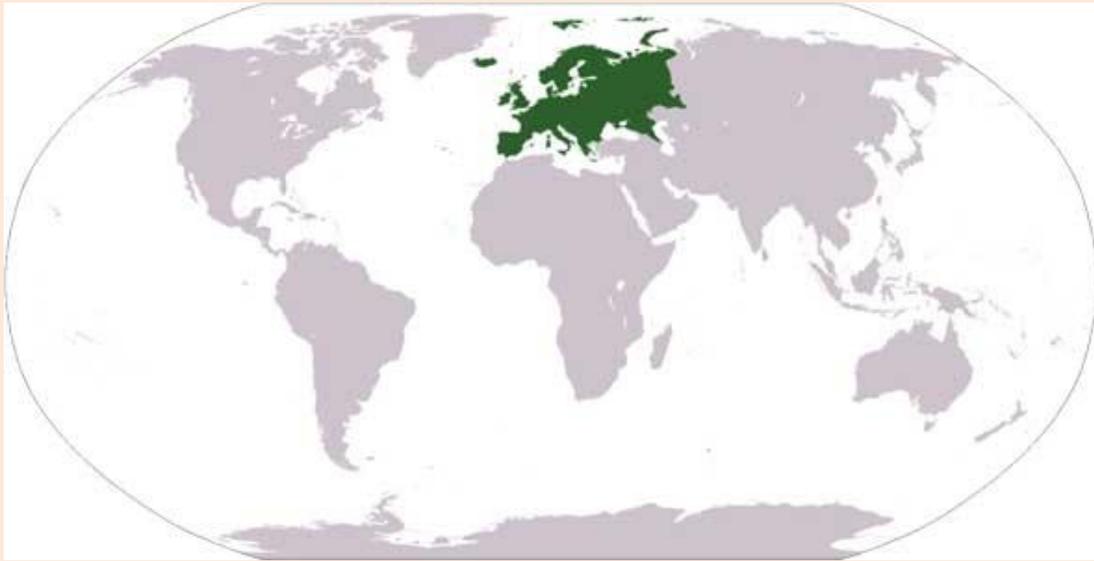
Biomass energy uses leftover materials from paper mills, sawmills and farms to create electricity. These materials include wood, paper, cornstalks and corn cobs. Trash and fast growing trees can also be used. Some farmers actually grow crops for power companies. These energy crops and other biomass can be burned to create steam to power generators.

Geothermal Energy

Geo means earth. Thermal means heat. Geothermal energy uses underground hot water reservoirs to power electric generators. Steam from the reservoirs spins turbines to create electricity. The Geysers in Northern California is the largest geothermal power plant in the United States. It creates enough electricity to power about 725,000 homes.



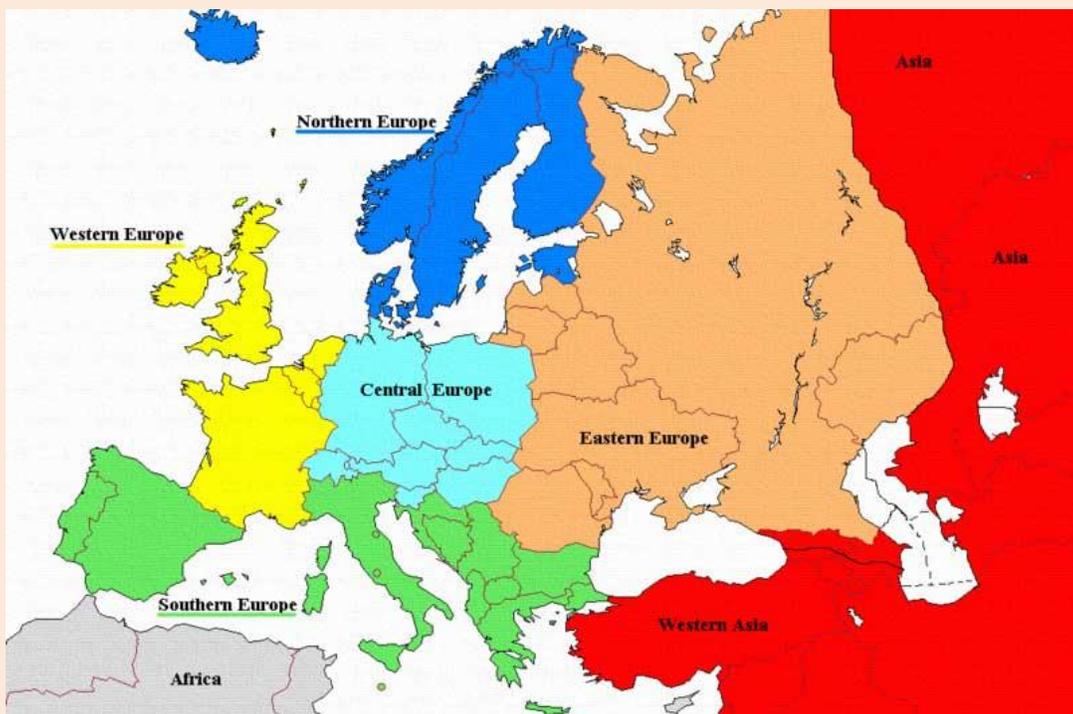
1. Hot water reservoir
2. Hot water from the Earth
3. Electrical power generation (with generator)
4. The generated electricity is fed into the network
5. Thereafter the rest of the hot water can still be used for heating purposes
6. Thermal energy can be reused
7. Cold water is fed back to the cycle to be reheated by the Earth



Continent: Europe

Europe is the second smallest continent on Earth. Australia is the smallest. But Europe is the third most populated continent with more than 700 million people. Only Asia and Africa have more people.

Europe is connected to Asia. Sometimes Europe and Asia are called Eurasia. Some of the largest cities in Europe are Moscow in Russia, London in the United Kingdom, Berlin in Germany, Madrid in Spain and Paris in France. Different areas of Europe are Western Europe, Eastern Europe, Northern Europe, Central Europe and Southern Europe.



Europe has about 50 countries. Some like Finland and Sweden are in the cold north. Others are



in the sunny south, like Spain and Italy. Countries like Greenland and Iceland are very far from Europe but are still considered to be part of the continent. Countries like Monaco and Andorra are much smaller than many cities.

Russia is in both Europe and Asia. The Ural Mountains separate the European side of the country from the Asian side.

Europe is bordered by the Arctic and Atlantic Oceans. The Mediterranean Sea is another large body of water.

The Volga River in Russia is the longest river in Europe. The tallest mountain is Mont Blanc, on



the border between France and Italy. Europe also has deserts. A desert is an area with little rainfall or other precipitation. About one third of the country of Iceland is desert.

Europe is famous for its many castles. Thousands of castles were built during a time called the Middle Ages. They were built by kings and lords.

Many castles are tourist sites today.

Some are crumbling ruins. Europe still has some kings, queens, princes and princesses, so some castles are still homes for royalty. Windsor Castle is one of the homes of Queen Elizabeth II, the queen of England.



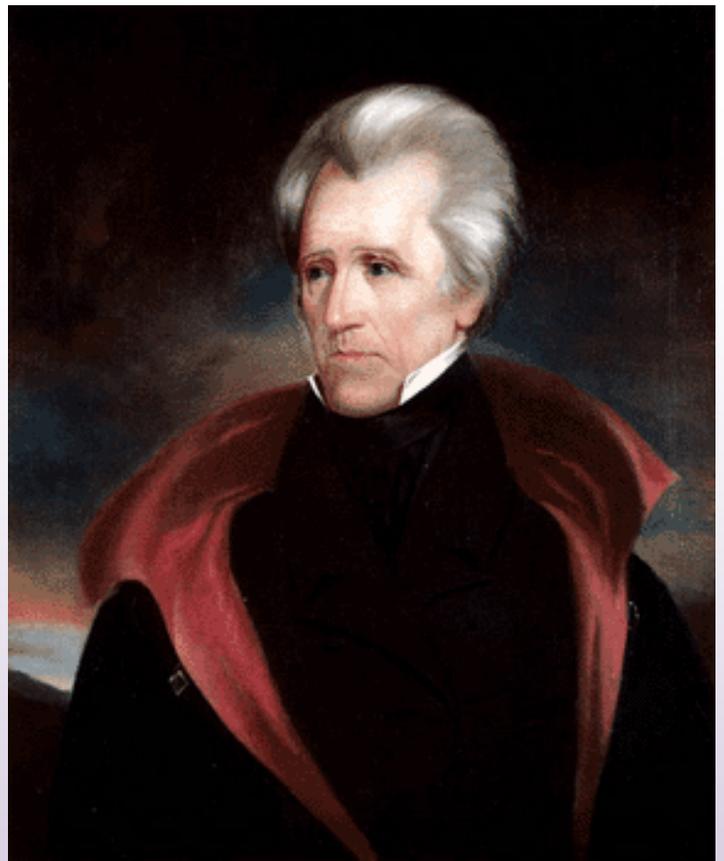
John Quincy Adams was the 6th president of the United States. He was born on July 11, 1767 in Braintree, Massachusetts. His father John Adams was the second president of the United States.

John Quincy Adams grew up during the American Revolution. He travelled around Europe with his father. He studied law when he grew up and became a lawyer. He always loved to read. He served one term as president. He was first elected in 1824. After serving as president he was elected to the House of Representatives.

Andrew Jackson was the 7th president of the United States. He was born on March 15, 1767. He grew up during the American Revolution. He joined the Continental Army at the age of 13. He was captured by the British and was held prisoner for several weeks. Both of his brothers died in the war. He became a lawyer when he grew up. He became president in 1829.

President Jackson approved of the State of Georgia's plan to remove Cherokee Indians from their land and force them onto reservations in the west. White settlers wanted the land and gold had been found there. In 1830, Congress signed the Indian Removal Act. The president quickly signed it into law.

Soldiers marched 17,000 Cherokee men, women and children more than a thousand miles. The march took 6 months. About 4000 people died due to the harsh conditions on the way. This forced removal of the Cherokee became known as the Trail of Tears.



George Washington Carver

George Washington Carver was a famous scientist and inventor. He was born into

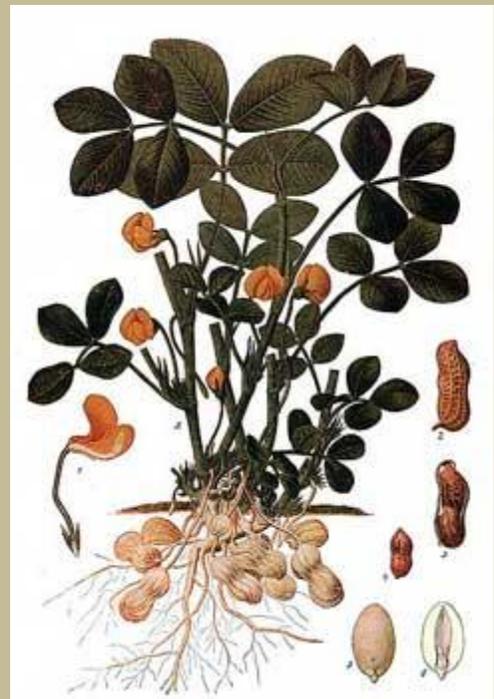


slavery on a farm in the state of Missouri. He was a sickly child, so he wasn't capable of doing heavy farm work. He spent a lot of time working in the garden. He was also taught to read and write. He started school at the age of 12. He graduated from high school and was accepted to college. When it was discovered that he was an African American, his application was rejected.

He applied to a different college in Iowa and was accepted. He graduated from Iowa Agricultural College, which is now Iowa State University. Carver had always been interested in botany, the study of

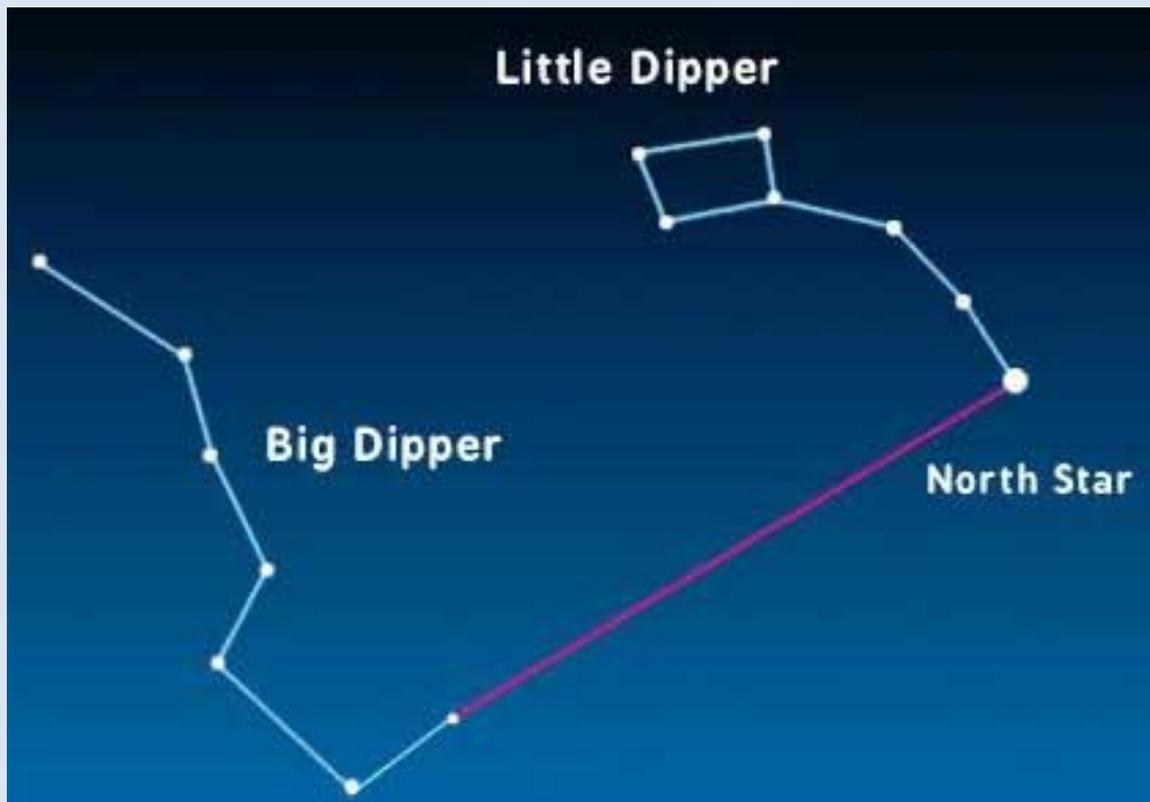
plants, so he earned a Master's Degree in botany and agriculture. He became a teacher at the Tuskegee Institute in the state of Alabama. He taught his students how to take care of soil. This is called soil conservation. Carver became very famous. People all over the world contacted him for advice on how to care for soil and crops.

Carver is most famous for inventing many different products made from peanuts. But he also invented many products made from sweet potatoes, soy beans and pecans. Some of his inventions made from peanuts were peanut milk, cheese, flour, coffee, ink, dyes, glue, plastics, soap, linoleum, oils, cosmetics and wood stains. He was such a brilliant inventor that Thomas Edison offered him a job. Carver refused the offer and continued to work at the Tuskegee Institute.



Polaris: The North Star

The North Star is a very important star because it is often used for navigation. Navigation means knowing where you are and finding where you want to go. Polaris, or the North Star, is almost directly above the North Pole. When you locate Polaris you will know how to go north.



The North Star is easy to find if you look for the Big Dipper, which is part of the constellation Ursa Major. A constellation is a group of stars that seem to make a picture in the sky. Ursa Major is the great bear.

The Big Dipper is a group of stars that are shaped like a dipper or drinking ladle. Think of it as a cup with a handle. The two stars in the end of the dipper or ladle point to Polaris.



A sextant is used to measure angles

Sailors at sea have been using the North Star to navigate their ships for hundreds of years. They used Polaris to determine both direction and latitude. Latitude refers to positions north or south of the Equator. It is measured in units called degrees.

The angle of Polaris above the horizon is used to measure the degree of latitude. An instrument called a sextant is used for this purpose. In the past, sailors and

explorers used sextants and Polaris to figure out their latitude. Navigators on

ships had to be highly skilled. They needed a lot of knowledge of math and the night sky to successfully navigate at sea.

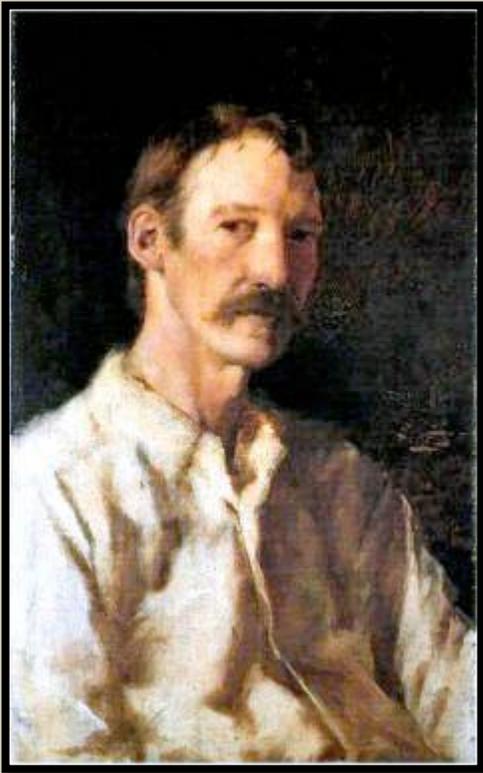


The North Star was also important on the Underground Railroad. The Underground Railroad consisted of routes and safe houses that slaves could use while escaping to freedom.

Slaves escaping from slave states in the South had to go north. They either went to free states in the North or to Canada using Polaris to guide them at night. Slaves were told to follow the drinking gourd. A drinking gourd is like a ladle that people used to use to drink water. This is the chorus of the song:

Follow the drinking gourd,
Follow the drinking gourd,
For the old man is awaiting for to carry you to freedom
If you follow the drinking gourd.

Poetry Corner



Robert Louis Stevenson was born in 1850 in Edinburgh, Scotland. He was a sickly child and suffered from lung problems throughout his life. His parents expected him to become an engineer when he grew up but he decided to become a writer instead.

His most famous book is called *Treasure Island*. He also wrote two other very famous books called *The Strange Case of Dr Jekyll and Mr. Hyde* and *Kidnapped*. He also wrote many poems. He moved to the island of Samoa and died there at the age of 44.

Bed in Summer

By Robert Louis Stevenson

In Winter I get up at night
And dress by yellow candle light.
In Summer, quite the other way,
I have to go to bed by day.

I have to go to bed and see
The birds still hopping on the tree,
Or hear the grown-up people's feet
Still going past me in the street.

And does it not seem hard to you,
When all the sky is clear and blue,
And I should like so much to play,
To have to go to bed by day?





Boys Fishing by John Constable

Boys Fishing was painted using oil paint on canvas. It was painted in 1813 by John Constable. Constable was a very famous British landscape and portrait painter. Landscape paintings show outdoor scenery like rivers, mountains, forests and fields. Boys Fishing shows two boys next to a river. Can you spot the bridge and house in the painting?

This painting is an example of Romanticism in art. Romanticism was a movement that placed a lot of value on emotion and imagination in art, music, poetry and books. Connecting with nature was an important part of the Romantic Movement.



The Four Seasons

Spring

The Four Seasons is composer Antonio Vivaldi's most famous work. It is an example of baroque music. The Baroque period in music dates from about 1600 to 1750. The Four Seasons includes Spring, Summer, Autumn and Winter. Vivaldi wrote sonnets to go with each season. A sonnet is a fourteen line poem. The sonnets were originally written in the Italian language.

Sonnet for Spring

Allegro

Springtime is upon us.

The birds celebrate her return with festive song,
and murmuring streams are softly caressed by the breezes.

Thunderstorms, those heralds of Spring, roar, casting their dark mantle over
heaven,

Then they die away to silence, and the birds take up their charming songs once
more.

Largo

On the flower-strewn meadow, with leafy branches rustling overhead, the goat-
herd sleeps, his faithful dog beside him.

Allegro

Led by the festive sound of rustic bagpipes, nymphs and shepherds lightly dance
beneath the brilliant canopy of spring.

* Nymphs are nature spirits in Greek mythology

Source: http://en.wikisource.org/wiki/The_Four_Seasons_Sonnets



A goatherder and his flock in an Italianate landscape
by Jacques-Raymond Brascassat (1804—1867)
Oil on canvas 1829

Tom's Lemonade Stand

Tom wanted to buy a new toy. He decided to set up a lemonade stand to make



some money. To make money, he had to make a profit on the sale of the lemonade. To understand what it means to make a profit, you need to learn about costs first.

What did Tom need to make lemonade? Obviously he needed lemons and sugar. He took money out of his piggy bank to buy the lemons and sugar he needed to make lemonade. He spent \$5 to get them. This was a cost.

He also wanted a big sign to put in front of his lemonade stand. He paid \$1 for the poster paper. That was another cost. So, his total costs were \$6.

Tom set up his lemonade stand and sold a lot of lemonade. He earned \$10 altogether. But he really only made \$4. This is his profit. You may be wondering why. Remember that Tom spent \$6 on lemons, sugar and poster paper?

The profit is the amount of extra money Tom made.

So, he made \$10 but he had to actually spend \$6 first. Tom started out with \$6 in his piggy bank. After his lemonade sale he now has \$10 in his piggy bank. So, he has \$4 more after the lemonade sale.



You can actually see this for yourself. Get six yellow blocks. Pretend this is the money Tom spent to buy lemons, sugar and poster paper. Now, put four blue blocks next to the six yellow blocks. The blue blocks are Tom's profit. This is the extra money he made by having a lemonade sale.



Three Branches of Government

Legislative Branch

The United States of America has 3 branches of government. They are:

- The Executive Branch
- The Legislative Branch
- The Judicial Branch



The Legislative Branch is called Congress. This branch makes laws for the country. Congress has two houses: the House of Representatives and the Senate. People in each state elect people to serve in Congress. Congress writes, discusses and votes for or against laws.

You may be wondering what a law actually is. In your house, you probably have rules that you must follow.

Maybe you have to put your plate in the sink after dinner. You must brush your teeth before you go to bed. You can't hit your brother or sister even if they make you angry. Rules are important in a home.

Laws are like rules for a whole country.

A lot of the laws in Congress relate to taxes and spending. Everyone must pay money called a tax that the government uses to pay for schools, libraries, police officers, soldiers, roads, bridges and many more things.

Congress decides how much people must pay in taxes and what to spend it on.

Members of the House of Representatives

serve two year terms. Each member represents what is called a district. Each state



has many districts. They have to be reelected by the people in their district if they want another term.

Senators serve six year terms. There are two senators from each state. Senators must also be reelected if they want to continue serving in the Senate.



US Senate Chamber

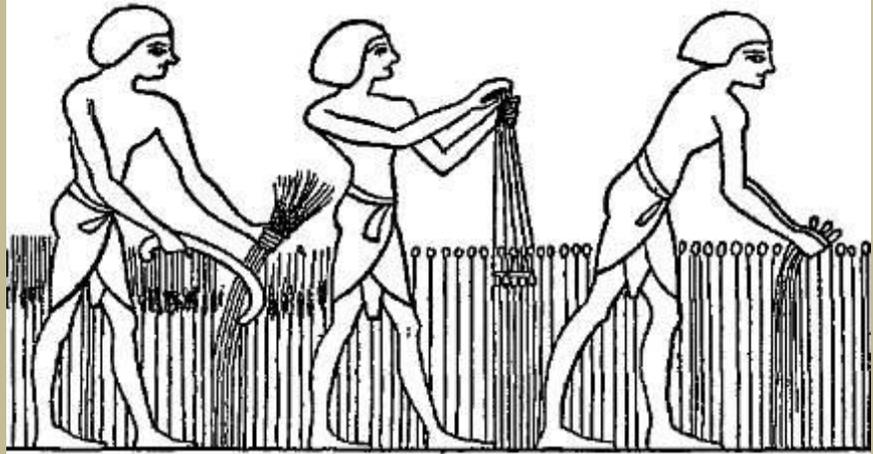


Congress meets in the Capitol Building in Washington DC

Settling the Nile

You may remember that early people settled along the Tigris and Euphrates rivers in Mesopotamia. Those rivers flooded every year and created rich, fertile soil.

Another important river that flooded every year was the Nile River in Egypt. It is the longest river on the continent of Africa. Most Egyptians lived near the Nile because it



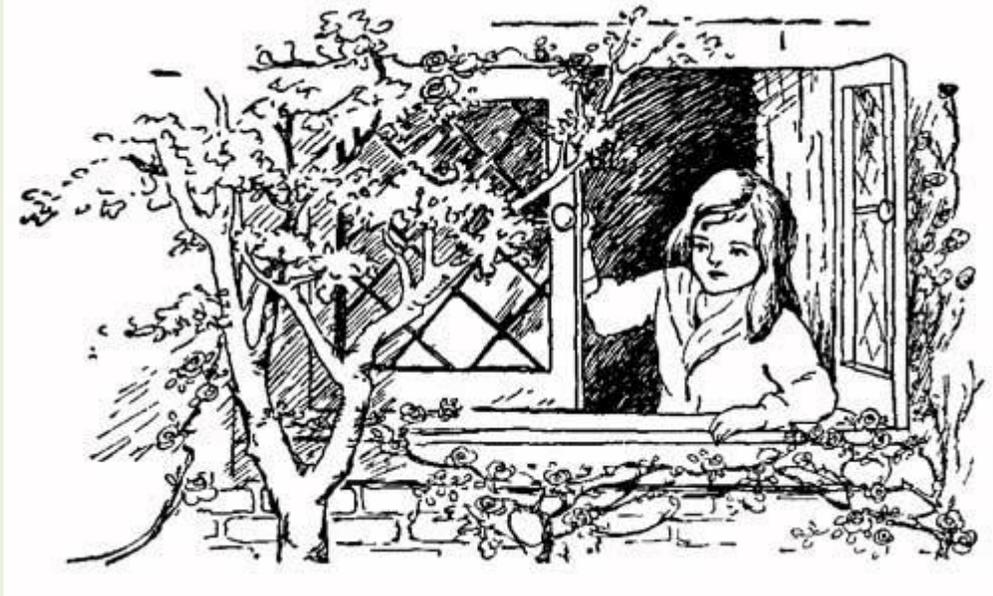
provided water, fish and transportation. It provided excellent soil for growing crops. Reeds also grew in the river. These reeds were used to make papyrus, which is a kind of paper. An important civilization grew along the Nile.

Musical Instruments: Tom-Tom Drum



Musical instruments fall into different groups: strings, woodwind, brass, percussion and keyboard. Which group do you think the tom-tom drum should be in? A tom-tom drum is a percussion instrument.

Percussion instruments make sounds by being hit with something like hands or drumsticks. The tom-tom was used in both Native American and Asian cultures. Tom-tom drums are still very popular. Modern drum kits used by rock bands often have some tom-tom drums.



LITTLE RED RIDING HOOD



There was once a sweet little maid who lived with her father and mother in a pretty little cottage at the edge of the village. At the further end of the wood was another pretty cottage and in it lived her grandmother.

Everybody loved this little girl, her grandmother perhaps loved her most of all and gave her a great many pretty things. Once she gave her a red cloak with a hood which she always wore, so people called her Little Red Riding Hood.

One morning Little Red Riding Hood's mother said, "Put on your things and go to see your grandmother. She has been ill; take along this basket for her. I have put in it eggs, butter and cake, and other dainties."

It was a bright and sunny morning. Red Riding Hood was so happy that at first she wanted to dance through the wood. All around her grew pretty wild flowers which she loved so well and she stopped to pick a bunch for her grandmother.



Little Red Riding Hood wandered from her path and was stooping to pick a flower when from behind her a gruff voice said, "Good morning, Little Red Riding Hood." Little Red Riding Hood turned around and saw a great big wolf, but Little Red Riding Hood did not know what a wicked beast the wolf was, so she was not afraid.

"What have you in that basket, Little Red Riding Hood?"

"Eggs and butter and cake, Mr. Wolf."

"Where are you going with them, Little

Red Riding Hood?"

"I am going to my grandmother, who is ill, Mr. Wolf."

"Where does your grandmother live, Little Red Riding Hood?"

"Along that path, past the wild rose bushes, then through the gate at the end of the wood, Mr. Wolf."

Then Mr. Wolf again said "Good morning" and set off, and Little Red Riding Hood again went in search of wild flowers.

At last he reached the porch covered with flowers and knocked at the door of the cottage.

"Who is there?" called the grandmother.

"Little Red Riding Hood," said the wicked wolf.

"Press the latch, open the door, and walk in," said the grandmother.

The wolf pressed the latch, and walked in where the grandmother lay in bed. He made one jump at her, but she jumped out of bed into a closet. Then the wolf put on the cap which she had dropped and crept under the bedclothes.





In a short while Little Red Riding Hood knocked at the door, and walked in, saying, "Good morning, Grandmother, I have brought you eggs, butter and cake, and here is a bunch of flowers I gathered in the wood." As she came nearer the bed she said, "What big ears you have, Grandmother."

"All the better to hear you with, my dear."

"What big eyes you have, Grandmother."

"All the better to see you with, my dear."

"But, Grandmother, what a big nose you have."

"All the better to smell with, my dear."

"But, Grandmother, what a big mouth you have."

"All the better to eat you up with, my dear," he said as he sprang at Little Red Riding Hood.





Just at that moment Little Red Riding Hood's father was passing the cottage and heard her scream. He rushed in and with his axe chopped off Mr. Wolf's head.

Everybody was happy that Little Red Riding Hood had escaped the wolf. Then Little Red Riding Hood's father carried her home and they lived happily ever after.



Source: <http://www.gutenberg.org>