Grade Unit 3 Diversity of Life

RECOMMENDED TIME: FEBRUARY - APRIL (8 WEEKS)

Unit Overview:

Diversity of life is seen through the study of cells. Prokaryotic and eukaryotic cells, and animal and plant cells, are observed to describe their structure and to explain how these cells make different organisms. Students will understand how cells are the primary source for biodiversity, and will learn to classify organisms according to similarities and differences at the cellular and organism level, as well as using internal and external structures in living things. Students will also study how different organisms have different energy needs to live. They will understand that energy flows through ecosystems in one direction, usually from the Sun, through producers to consumers and then decomposers, in which its balance is the result of interactions between living and nonliving things. Students will be able to construct models of biomes and/or ecosystems they investigate and that will visually represent their explanation about how energy is used and transformed by different organisms in an ecosystem. [Refer to Appendix A for the Humane Treatment of Animals and Conservation Day]

Essential Question:

How does the transfer of matter and energy through biological communities support the diversity of living things?

Key Ideas:

- LE. Key Idea 1: Living things are both similar to and different from each other and from nonliving things.
- **LE. Key Idea 5:** Organisms maintain a dynamic equilibrium that sustains life.
- LE. Key Idea 6: Plants and animals depend on each other and their physical environment.

	NYS SCIENCE STANDARDS http://www.p12.nysed.gov/ciai/mst/pub/intersci.pdf	MST STANDARDS http://www.p12.nysed.gov/ciai/mst/pub/intersci.pdf	NGSS CROSS-CUTTING CONCEPTS http://www.nextgenscience.org/sites/ngss/files/Appendix%20G%20 -%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf
	Major Understandings:	Standard 2: Information Systems	Systems and System Models:
	Quoted from New York State Performance Indicators (1.1a - h; 5.1c, d, e; 5.2a-e; 6.1a-c; 6.2a-c)	Key Idea 1: Information technology is used to retrieve, process, and communicate information as a tool to	A system is an organized group of related objects or components; models can be used for understanding
	Living things are composed of cells. Cells provide	enhance learning.	and predicting the behavior of systems.
structure and carry on major functions to sustain Cells are usually microscopic in size. (1.1a)	Cells are usually microscopic in size. (1.1a)	Key Idea 2: Knowledge of the impacts and limitations of information systems is essential to its effectiveness.	 Systems may interact with other systems; they may have sub-systems and be a part of larger complex systems.
	continued	continued	 Models can be used to represent systems and their interactions—such as inputs, processes and outputs— and energy, matter, and information flows within systems.
			continued

NYS SCIENCE STANDARDS

http://www.p12.nysed.gov/ciai/mst/pub/intersci.pdf

- The way in which cells function is similar in all living things. Cells grow and divide, producing more cells. Cells take in nutrients, which they use to provide energy for the work that cells do and to make the materials that a cell or an organism needs. (1.1b)
- Most cells have cell membranes, genetic material. and cytoplasm. Some cells have a cell wall and/or chloroplasts. Many cells have a nucleus. (1.1c)
- Some organisms are single cells; others, including humans, are multicellular. (1.1d)
- Cells are organized for more effective functioning in multicellular organisms. Levels of organization for structure and function of a multicellular organism include cells, tissues, organs, and organ systems. (1.1e)
- Many plants have roots, stems, leaves, and reproductive structures. These organized groups of tissues are responsible for a plant's life activities. (1.1f)
- Multicellular animals often have similar organs and specialized systems for carrying major life activities. (1.1g)
- Living things are classified by shared characteristics on the cellular and organism level. In classifying organisms. biologists consider details of internal and external structures. Biological classification systems are arranged from general (kingdom) to specific (species). (1.1h)
- All organisms require energy to survive. The amount of energy needed and the method for obtaining this energy vary among cells. Some cells use oxygen to release the energy stored in food. (5.1c)
- The methods for obtaining nutrients vary among organisms. Producers, such as green plants. Use light energy to make their food. Consumers. Such as animals, take in energy-rich foods. (5.1d)

MST STANDARDS

http://www.p12.nysed.gov/ciai/mst/pub/intersci.pdf

Standard 6: Interconnectedness: Common Themes

Key Idea 1: Through systems thinking, people can recognize the commonalities that exist among all systems and how parts of a system interrelate and combine to perform specific functions.

Key Idea 2: Models are simplified representations of objects, structures, or systems used in the analysis, explanation, interpretation, or design.

Key Idea 4: Equilibrium is a state of stability due either to a lack of change (static equilibrium) or a balance between opposing forces (dynamic equilibrium).

Standard 7: Interdisciplinary Problem Solving

Key Idea 2: Solving interdisciplinary problems involves a variety of skills and strategies, including effective work habits; gathering and processing information; generating and analyzing ideas; realizing ideas; making connections among common themes of mathematics, science and technology; and presenting results.

NGSS CROSS-CUTTING CONCEPTS

http://www.nextgenscience.org/sites/ngss/files/Appendix%20G%20 -%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf

 Models are limited in that they only represent certain aspects of the system under study.

Energy and Matter: Flows, Cycles, and Conservation:

Tracking energy and matter flows into, out of, and within systems helps one understand their system's behavior.

- Matter is conserved because atoms are conserved in physical and chemical processes.
- Within a natural or designed system, the transfer of energy drives the motion and/or cycling of matter.
- Energy may take different forms (e.g. energy in fields, thermal energy, energy of motion).
- The transfer of energy can be tracked as energy flows through a designed or natural system.

Grade 7.3 7.4 Also return to these concepts

continued



Living Environment

RECOMMENDED TIME: 20 DAYS

Unit Overview:

Living things are similar in that they rely on many of the same processes to stay alive, yet are different in the ways that these processes are carried out. Nonliving things lack certain features of living organisms, such as the ability to maintain a cellular organization, carry out metabolic processes while maintaining internal stability (homeostasis), and pass on hereditary information through reproduction. Different organisms have different regulatory mechanisms that function to maintain the level of organization necessary for life. Life is dependent upon availability of an energy source and raw materials that are used in the basic enzyme-controlled biochemical processes of living organisms. These biochemical processes occur within a narrow range of conditions. [Refer to Appendix A for the Humane Treatment of Animals and Conservation Day]

Essential Question:

How is a single-celled organism similar to and different from a human?

Key Ideas:

Key Idea 1: Living things are both similar to and different from each other and from nonliving things.

Key Idea 4: The continuity of life is sustained through reproduction and development.

Key Idea 5: Organisms maintain a dynamic equilibrium that sustains life.

NYS SCIENCE STANDARDS

http://www.p12.nysed.gov/ciai/mst/sci/documents/livingen.pdf

Major Understandings:

Quoted from the New York State Performance Indicators (1.2a, c, e-j, 1.3a, 4.1a, b, 5.1a-g)

- Important levels of organization for structure and function include organelles, cells, tissues, organs, organ systems, and whole organisms. (1.2a)
- The organs and systems of the body help to provide all the cells with their basic needs. The cells of the body are of different kinds and are grouped in ways that enhance how they function together. (1.2e)

MST STANDARDS

http://www.p12.nysed.gov/ciai/mst/pub/mststa1_2.pdf http://www.p12.nysed.gov/ciai/mst/pub/mststa6 7.pdf

Standard 2: Information Systems

Key Idea 1: Information technology is used to retrieve. process, and communicate information and as a tool to enhance learning.

Standard 6: Interconnectedness: Common Themes

Key Idea 1: Through systems thinking, people can recognize the commonalities that exist among all systems and how parts of a system interrelate and combine to perform specific functions.

continued

NGSS CROSS-CUTTING CONCEPTS

http://www.nextgenscience.org/sites/ngss/files/Appendix%20G%20 -%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf

Cause and Effect: Mechanism and Prediction:

Events have causes, sometimes simple, sometimes multifaceted. Deciphering causal relationships, and the mechanisms by which they are mediated, is a major activity of science and engineering.

- Cause and effect relationships can be suggested and predicted for complex natural and human-designed systems by examining what is known about smaller scale mechanisms within the system.
- Changes in systems may have various causes that may not have equal effects.

NYS SCIENCE STANDARDS

http://www.p12.nysed.gov/ciai/mst/sci/documents/livingen.pdf

- Each cell is covered by a membrane that performs a number of important functions for the cell. These include: separation from its outside environment, controlling which molecules enter and leave the cell, and recognition of chemical signals. The processes of diffusion and active transport are important in the movement of materials in and out of cells. (1.2g)
- Inside the cell a variety of specialized structures, formed from many different molecules, carry out the transport of materials (cytoplasm), extraction of energy from nutrients (mitochondria), protein building (ribosomes), waste disposal (cell membrane), storage (vacuole), and information storage (nucleus). (1.2i)
- The components of the human body, from organ systems to cell organelles, interact to maintain a balanced internal environment. To successfully accomplish this, organisms possess a diversity of control mechanisms that detect deviations and make corrective actions. (1.2c)
- Cells have particular structures that perform specific jobs. These structures perform the actual work of the cell. Just as systems are coordinated and work together, cell parts must also be coordinated and work together. (1.2f)
- The structures present in some single-celled organisms act in a manner similar to the tissues and systems found in multicellular organisms, thus enabling them to perform all of the life processes needed to maintain homeostasis. (1.3a)

continued

MST STANDARDS

http://www.p12.nysed.gov/ciai/mst/pub/mststa1_2.pdf http://www.p12.nysed.gov/ciai/mst/pub/mststa6_7.pdf

Key Idea 2: Models are simplified representations of objects, structures, or systems used in analysis, explanation, interpretation, or design.

Key Idea 3: The grouping of magnitudes of size, time, frequency, and pressures or other units of measurement into a series of relative order provides a useful way to deal with the immense range and the changes in scale that affect the behavior and design of systems.

Key Idea 5: Identifying patterns of change is necessary for making predictions about future behavior and conditions.

Standard 7: Interdisciplinary Problem Solving

Key Idea 2: Solving interdisciplinary problems involves a variety of skills and strategies, including effective work habits; gathering and processing information; generating and analyzing ideas; realizing ideas; making connections among the common themes of mathematics, science, and technology; and presenting results.

NGSS CROSS-CUTTING CONCEPTS

http://www.nextgenscience.org/sites/ngss/files/Appendix%20G%20 -%20Crosscutting%20Concepts%20FINAL%20edited%204.10.13.pdf

Scale, Proportion, and Quantity:

In considering phenomena, it is critical to recognize what is relevant at different size, time, and energy scales, and to recognize proportional relationships between different quantities as scales change.

- The significance of a phenomenon is dependent on the scale, proportion, and quantity at which it occurs,
- Some systems can only be studied indirectly as they are too small, too large, too fast, or too slow to observe directly.
- Patterns observable at one scale may not be observable or exist at other scales.

Systems and System Models:

A system is an organized group of related objects or components; models can be used for understanding and predicting the behavior of systems.

- Models (e.g., physical, mathematical, computer models) can be used to simulate systems and interactions including energy, matter, and information flows—within and between systems at different scales.
- Models can be used to predict the behavior of a system, but these predictions have limited precision and reliability due to the assumptions and approximations inherent in models.

Structure and Function:

The way an object is shaped or structured determines many of its properties and functions.

■ The functions and properties of natural and designed objects and systems can be inferred from their overall structure, the way their components are shaped and used, and the molecular substructures of its various materials.

Plan Supplemental Materials for + Students Who Represent a Range of Proficiency and Literacy Levels

Collaborative Reading

Topic:			
10 P. 10			

	Group Member: Resource:	Group Member: Resource:	Group Member: Resource:	Group Member: Resource:
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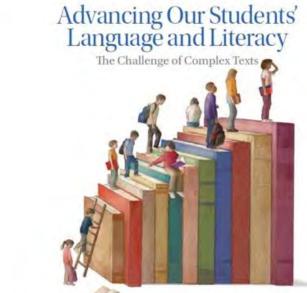
Typical Reader Measures, by Grade

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Grade	Reader Measures, Mid-Year 25th percentile to 75th percentile (IQR)
1	Up to 280L
2	230L to 580L
3	360L to 720L
4	480L to 830L
5	620L to 950L
6	690L to 1020L
7	780L to 1090L
8	820L to 1140L
9	880L to 1170L
10	920L to 1200L
11	940L to 1210L

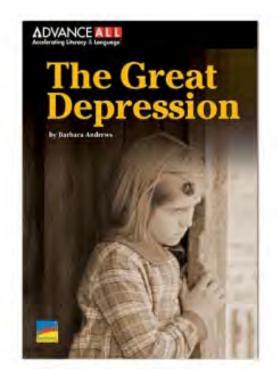
950L to 1220L

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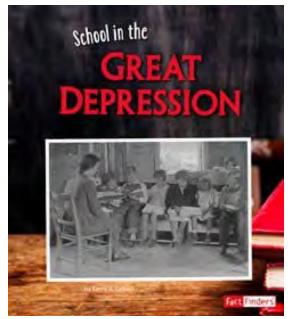


The Lexile Framework for keading Matching readers with texts

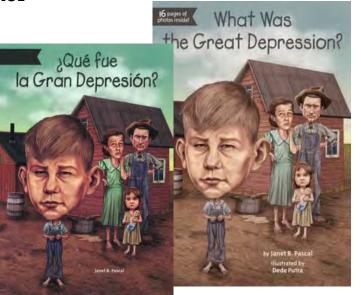
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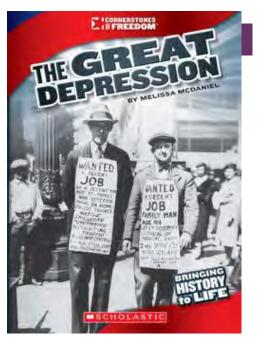


Benchmark Education Books, Lexile 410, reading Level B Barbara Andrews, author Advance ALL Series (2nd/3rd Grade Level



Capstone Press, Lexile 850, GRL V (5th/6th) Kerry A Graves, author Fact Finder Series





Children's Press, Scholastic Library Publishing Reading Level 6.3; GRL U Lexile 880 Melissa McDaniel, Author Cornerstones of Freedom Series

Grosset & Dunlap, Lexile 790, Grade Level 5.5 Janet Pascal, author Available in English and SpanishAdv

6 pages

Capstone Press, Lexile 850, GRL V (5th-6th) Kerry A Graves, author Fact Finder Series

FROM THE ROARING '20s
TO THE GREAT DEPRESSION

During the 1920s the U.S. economy flourished.

Many American businesses made large profits manufacturing automobiles and electrical appliances such as washing machines, refrigerators, and vacuum cleaners. Companies hired many workers to make these new products. With most Americans working, families could afford to buy homes, take trips, and go to the movies. People called these years the Roaring '20s.

The good times of the 1920s were the result of **investments** in the stock market. In the early 1900s business owners began investing money in stock market. About 1.5 million people spent their savings to buy stocks.

investment—money lent or given to a company in the nope of getting more money back

Watxally assembled the fast life millimater comercia at the Eastman Foldok Company in Rochester, New York.

START

Buying Stocks

school in the

DEPRESSION

When a person buys stock in a company, they own a part of the company. Stocks are divided into portions, which are bought for a certain price. These portions are called shares. People who buy shares are called stockholders. When a company does well, the value of the stock goes up, and the shares are worth more. If a company does poorly, the value of the shares goes down.

Stockholders can make a profit by selling stocks when the value goes up. People often hire brokers to buy and sell stocks for them. The professionals work at stock exchanges, such as the New York Stock Exchange. Stockbrokers also give advice to people on which stocks to buy. Buying stocks is often risky. Investors sometimes love money on stocks.

Active Voice; Not Passive

Short Sentences

But by the late 1920s economists were warning people that the stock market was not stable. In mid-October 1929 stock prices began to drop. Investors began selling their stocks. By Tuesday, October 29, shareholders had sold 28 million shares of stock. The rapid sales activity caused the stock market to crash. That day became known as Black Tuesday.

Stockholders went from rich to poor overnight. Many people had to sell their stocks for much less than they had paid. And they could not afford to pay back the money they had initially borrowed. Investors could not pay back their loans to the banks. The banks went broke. Millions of people lost their entire savings.

The stock market crash also affected people all over the world. U.S. banks could not afford to invest in foreign businesses. People were not buying imported products, and companies could not sell goods to foreign countries.

economist—someone who studies the way money, goods, and services are used in a society

When people realized they had lost their savings, they tried to hang on to any assets they had left. They stopped buying new products. This caused many factories and stores to shorten employees' working hours. Unemployed people could not pay their bills. Many families sold their homes, cars, and other possessions just to buy enough food.

By 1932 almost 55,000 businesses had closed. By 1933 more than 9,000 banks had failed. In the United States one in four people was unemployed. This time of economic **crisis** was called the Great Depression



crisis-a time of danger or difficulty

On-page glossing



The U.S. government was not prepared to deal with the widespread poverty. President Herbert Hoover wanted people to work hard to solve their financial problems. He did not want citizens to become **dependent** on government aid.

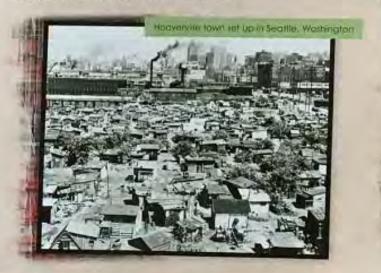
Instead Hoover **loaned** money to large businesses. He believed that when the companies were again successful, owners could rehire workers at a good wage.

dependent depending on or controlled by something or someone alse

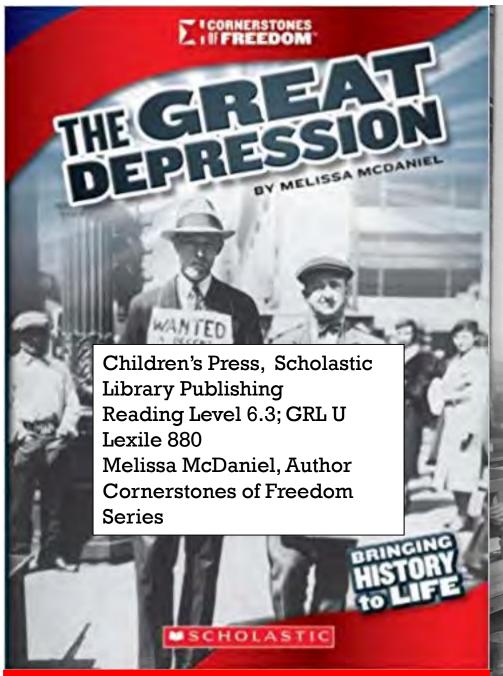
loan-money that is borrowed with a plan to pay it back

Many citizens blamed Hoover for not doing enough to help them out of **poverty** People who lost their homes often lived in shacks made from cardboard and scrap metal. They called the neighborhoods "Hoovervilles." In the 1932 presidential election, citizens showed their dislike for Hoover. They elected Franklin D. Roosevelt as their new president instead.

During the Great Depression parents of large families often struggled to feed their children. Older children looked for work. Most could not find jobs. Some children dropped out of school to care for younger siblings while their parents worked or looked for jobs.



Supportive Visuals



Read the Same Information Again; Two Texts to Deepen Understanding; Practice Reading; Recycle Academic Vocabulary was booming.

A Rising Market

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People also spent money on stock. Stock sales provide companies with the money needed to expand their businesses. In return, the stocks serve as investments for the people who buy them by increasing in value as

U.S. factories produced a wide variety of goods, including radios, during the economic boom.



a company becomes more successful. The Dow Jones Industrial Average is a measure of the value of the stock of 30 large companies. It is an important sign of the U.S. economy's strength. In 1929, it was four times as high as it had been just five years earlier.

Many Americans, including some economists, believed the stock market had become a sure bet. Almost everyone saw it as an easy way to get wealthy. Some thought it was such a great investment that they borrowed money from their **stockbrokers** to buy the stock. This is called buying on margin. Some people paid as little as 10 percent of the stock's actual price. They borrowed the rest of the money.





Investors struggled to unload all of their stocks as prices began to fall.

As the value of stocks shot up, more people invested in the market. This pushed prices up even more. Such **speculation** caused stocks to become worth far more than the companies they represented.

Going Down

In September 1929, stock prices began to fall. As they fell, many investors got nervous. They wanted to sell their stocks before prices dropped even more. This caused stock values to enter a downward cycle. With more people trying to sell stocks and fewer people wanting to buy, prices continued to plummet. Those who had borrowed



Plummeting stock prices caused a frenzy on the trading floor.

money to purchase their stocks were in trouble. They had no way to pay back what they owed, and the stocks themselves had little value. Many people went bankrupt.

Then, on Thursday, October 24, the market's decline went from a gradual slide to a sudden plunge. People were shocked, and panic took hold. Investors wanted to sell their stocks before they became totally worthless. Thirteen million shares of stock were sold that day—more than on any other day in history.

Over the weekend, President Herbert Hoover spoke, about the troubled stock market. His words were

broadcast over the radio into living rooms across the country. "The fundamental business of the country ...," he said, "is on a sound and prosperous basis."

But he was wrong. Stock prices fell even farther on Monday. By the end of the day, the Dow Jones Industrial Average had dropped 22.6 percent.

Black Tuesday

When the bell rang to signal the opening of trading at the New York Stock Exchange the following day, the cries of "Sell!

Sell!" were incredibly loud. Everyone wanted out of the market. A guard at the stock exchange described the shock felt by the stockbrokers. He recalled, "They roared like a lot of lions and tigers. They hollered and screamed, they clawed at one another's collars. It was



Wall Street

Today, people use the term Wall Street to refer to all of the nation's banking and financial industries at once. But Wall Street is also an actual street in Lower Manhattan. At one time, there was even a wall on Wall Street. It was built in 1653 to protect the tiny community of settlers there from being attacked by outsiders.

These days, Wall Street runs for just a few blocks. The New York Stock Exchange has been located on or near Wall Street since 1792. Over the years, many other stock exchanges and banks have also been located in the area. Wall Street remains the heart of the city's financial district.

like a bunch of crazy men. Every once in a while, when a big company would take another tumble, you'd see some poor devil collapse and fall to the floor."

As the stocks lost value, many wealthy people lost their fortunes. Many middle-class people lost their life savings—and hope. People flooded onto New York City's Wall Street, the center of finance in the United States, hoping to find out what had happened to their money. But there was nothing anyone could do. The money was gone.

By the end of the day, more than 16 million stocks had been sold, a record that would stand for 40 years. The Dow Jones Industrial Average had dropped another 12 percent that day. Thousands of investors lost

The stock market crash made headlines across the nation.





Extra police were dispatched to keep peace on Wall Street after the stock market crash.

everything. To this day, October 29, 1929, is known as Black Tuesday. It was the beginning of the Great Depression.

A FIRSTHAND LOOK AT TICKER TAPE

In the 1920s, stock prices were printed out on long rolls of narrow paper called ticker tape. Investors looked at the tape to see how stock prices changed for different companies over the course of the day. During the stock market crash of 1929, so many stocks were sold that the ticker tape machines could not keep up. See page 60 for a link to view ticker tape from Black Tuesday, October 29, 1929.

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The Many Causes of the Great Depression

By David M. Kennedy, The Gilder Lehrman Institute of American History, adapted by Newsela staff on 12.19.16 Word Count 560



Unemployed men line up outside a Depression soup kitchen in Chicago, Illinois, in 1931. National Archives and Records Administration

Herbert Hoover was the 31st president of the United States. He was in office for only a short time. It was during the country's worst economic disaster. The stock market crashed in 1929. Soon after, the Great Depression began.

The Great Depression lasted from 1929 to 1939. It started in the United States and was a problem for the whole world. People lost their jobs. Some could not keep their homes. Many did not have enough food to eat. Most could not afford to buy things that they wanted. Companies could not make goods and farmers had a hard time growing crops.

People disagree about what caused the Great Depression. It occurred after World War I. The war lasted from July 28, 1914, to November 11, 1918. The fighting was hard on key countries like Britain, France and Germany. Bad feelings left countries feeling at odds with one another even after the war ended. They did not join together to deal with the weak global economy.

NEWSELA

Lexile 730

America turns its back on the world

The United States' role in World War I was minimal, During the 1920s, Americans did not want to take part in Europe's problems. The United States disarmed its military forces. The government did not like the Treaty of Versailles. This was a peace deal between Germany and the Allied Powers to end World War I. The main Allied Powers were Great Britain, France, Russia and Italy.

The government also did not want to be a part of the League of Nations. This was a group made up of many countries. It was formed to solve problems between them. The U.S. government also placed the highest taxes ever on goods from other countries. This hurt trading.

In 1924, for the first time, a limit was put on the number of people from other countries who could come live in America. Millions of people were turned away. Americans seemed to be turning their backs on the outside world.

At the same time, banks were unstable and the government was weak. The Great Depression began to unfold.

From Great Crash to New Deal

In October of 1929, stock prices plunged. Thousands of banks failed. Tens of thousands of businesses collapsed. Millions of people became unemployed. This terrible event is known as the Great Crash.

By 1932, about 13 million Americans were out of work. This was equal to 1 out of every 4 workers in the country. Many people believed they were witnessing the end of the American way of life.

Franklin D. Roosevelt, commonly known as FDR, was elected president in 1932. He promised "a new deal for the American people." FDR believed that Americans' lives could be made more stable. He transformed the country. The New Deal invented many programs for people to have jobs, trustworthy banks and secure lives.

The story of the Great Depression is not simply the story of the American people during one of the most difficult times in history. It is also part of a larger story of people in every part of the world who were swept up in the hardships of the Great Depression.

David M. Kennedy is the Donald J. McLachlan Professor of History at Stanford University. He wrote "Birth Control in America: The Career of Margaret Sanger" (1970) and "Over Here: The First World War and American Society" (1980).

Visual Support?

The Many Causes of the Great Depression

By David M. Kennedy, The Gilder Lehrman Institute of American History, adapted by Newsela staff on 12,19,16 Word Count 805



Unemployed mere line up obtaide a Depression soup latetien in Chaugo, Illinois, in 1991, National Archives and Records Administration

Herbert Hoover was the 31st president of the United States. He served just one term in office and it will always be remembered. His presidency was defined by the stock market crash of 1929 and the beginnings of the Great Depression.

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Economists and historians continue today to debate the causes of the Great Depression. There is little doubt that there is a link to World War I. The lighting had taken a toll on key countries. They included Britain, France and Germany. These countries were the core of the modern world. Bad memories of the conflict left countries feeling at odds with one another. They did not join together to deal with the frail global economy. NEWSELA

Lexile 970

America turns its back on the world

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By David M. Kennedy, The Gilder Lehrman Institute of American History, adapted by Newsela staff on 12.19.16 Word Count 906



Unemployed men line up outside a Depression soup kitchen in Chicago, Illinois, in 1931. National Archives and Records Administration

Herbert Hoover, the 31st president of the United States, served just one term in office, but it was a memorable one. It was defined by the stock market crash of 1929 and the beginnings of the Great Depression.

Economists and historians continue today to debate the causes of the Great Depression. There is little doubt that there is a link to World War I. The fighting had taken a cruel toll on key economies, like Britain, France and Germany. These countries were the core societies of the advanced industrialized world. Disruptions in trade and the flow of money continued after the war ended. Furthermore, bitter memories of the war left countries feeling at odds with one another, preventing them from forming a unified approach to deal with the frail global economy.

The United States' actions in World War I were minor and only occurred toward the end of the conflict that lasted from July 28, 1914, to November 11, 1918. The country's role went against its tradition of not involving itself in Europe's affairs. This resulted in Americans turning their country even more inward during the 1920s. The United States disarmed its

America turns inward

The United States' role in World War I was minor and only toward the end of the conflict that lasted from July 28, 1914, to November 11, 1918. The country's participation went against its desire to not involve itself in Europe's affairs. This resulted in Americans turning their country even more inward during the 1920s. The United States disarmed its military forces and war machinery. The U.S. Senate refused to approve the Treaty of Versailles, which was a peace agreement between Germany and the Allied Powers (predominately Great Britain, France, Russia and Italy) to end World War I.

The Senate also rejected membership in the League of Nations, even though it had been promoted by former President Woodrow Wilson. The League was an international group formed to resolve disputes between countries. It was the precursor to the United Nations.

In 1922, Congress passed one of the highest taxes in history on those who sold foreign goods in the U.S., which hurt trading between countries.

Meanwhile, the federal government insisted throughout the 10 years after the war that the Europeans must repay all the loans given to them by the U.S. Treasury. This was a hardship for the countries recovering from war.

In 1924, America, for the first time in its history, imposed a strict limit on the number of immigrants who could annually enter the country. Millions of people were turned away.

Militarily, diplomatically, commercially, financially and morally, Americans seemed to be turning their backs on the outside world.

Stocks fall, businesses fail

The banking system was unstable and the federal government was weak as the Great Depression began to unfold.

In October of 1929, stock prices plunged. Thousands of banks failed. Tens of thousands of businesses collapsed. Millions of people became unemployed. This terrible event is known as the Great Crash.

By 1932, about 13 million Americans were out of work. This equaled 1 out of every 4 workers in the country. Many people believed they were witnessing the end of the American way of life.

Franklin D. Roosevelt, commonly known as FDR, was elected president in 1932. He promised "a new deal for the American people." FDR believed that Americans' lives could be made more secure. His results transformed the country. FDR held office for more than a dozen years. He was elected president three times. This record was unmatched by previous presidents and forbidden for all future presidents when the 22nd Amendment to the Constitution was passed in 1951.

Las muchas causas de la Gran Depresión

By David M. Kennedy, Gilder Lehrman Institute on 12.18.16 Word Count 544



Hombres desempleados haciendo fila en la puerta de un comedor de la época de la Depresión en Chicago, Illinois, en 1931. National Archives and Records Administration

Herbert Hoover fue el 31er presidente de los Estados Unidos. Tuvo el cargo por poco tiempo. Fue durante el peor desastre económico del país. La bolsa de valores se desplomó en 1929. Poco después, se inició la Gran Depresión.

La Gran Depresión duró de 1929 a 1939. Se inició en los Estados Unidos y fue un problema para todo el mundo. La gente perdía sus empleos. Algunos no podían conservar sus casas. Muchos no tenían suficiente comida. La mayoría no podía comprar las cosas que quería. Las compañías no podían producir bienes y los granjeros tenían dificultad para cosechar.

La gente no se pone de acuerdo acerca de la causa de la Gran Depresión. Ocurrió tras la Primera Guerra Mundial. La guerra duró del 28 de julio de 1914 al 11 de noviembre de 1919. El combate era arduo entre países importantes como Gran Bretaña, Francia y Alemania. Los malos sentimientos dejaron a los países resentidos entre ellos aun después de terminada la guerra. No comerciaban entre ellos debido a la debilitada economía global.

NEWSELA

Lexile 660



Los Estados Unidos dan la espalda al mundo

La participación de los Estados Unidos en la Primera Guerra Mundial fue mínima. Durante la década de 1920, los estadounidenses no querían involucrarse en los problemas de Europa. Los Estados Unidos desarmaron sus fuerzas militares. El Tratado de Versalles no fue del agrado del gobierno. Se trataba de un acuerdo entre Alemania y las Potencias Aliadas para poner fin a la Primera Guerra Mundial. Las principales Potencias Aliadas eran Gran Bretaña, Francia, Rusia e Italia.

El gobierno tampoco quería ser parte de la Liga de las Naciones. Este grupo estaba formado por muchos países. Fue formado para resolver los problemas entre ellos. El gobierno de los Estados Unidos impuso los impuestos más elevados en la historia a los bienes de otros países. Esto afectó al comercio.

En 1924, por vez primera, se impuso un límite en el número de personas de otros países que podían vivir en los Estados Unidos. Millones de personas eran rechazadas. Los estadounidenses parecían estar dando la espalda al resto del mundo.

Al mismo tiempo, los bancos no tenían estabilidad y el gobierno era débil. La Gran Depresión comenzó a desatarse.

De la Gran Depresión al Nuevo Trato

En octubre de 1929, los precios de las acciones se desplomaron. Miles de bancos quebraron. Decenas de miles de negocios se colapsaron. Millones de personas quedaron desempleadas. Este terrible evento es conocido como el Crac Bursátil.

Para 1932, cerca de 13 millones de estadounidenses estaban desempleados. Esto equivalía a uno de cada cuatro trabajadores en el país. Muchos creían que estaban siendo testigos del fin del estilo de vida estadounidense.

Franklin D. Roosevelt, conocido como FDR, fue electo presidente en 1932. Prometió "un nuevo trato para los estadounidenses". FDR creía que la vida de los estadounidenses podía ser más estable. Transformó el país. El Nuevo Trato creó muchos programas para que la gente tuviera empleo, bancos confiables y una vida segura.

La historia de la Gran Depresión no es solo la historia de los estadounidenses durante uno de los períodos más difíciles en la historia. Es también parte de una historia más grande de gente en cada rincón del mundo que fue arrastrado a las dificultades de la Gran Depresión.

Las múltiples causas de la Gran Depresión

By David M. Kennedy, Gilder Lehrman Institute on 12.19.16 Word Count 974



Hombres desempleados haciendo fila en la puerta de un comedor de la época de la Depresión en Chicago, Illinois, en 1931. National Archives and Records Administration

Herbert Hoover, trigésimo primer presidente de los Estados Unidos, permaneció en el cargo solo durante un período, pero resultó ser memorable. Su presidencia se definió por el derrumbe de la bolsa de valores en 1929 y el inicio de la Gran Depresión.

Los economistas e historiadores continúan debatiendo hoy las causas de la Gran Depresión. Casi no hay duda de que hay una relación con la Primera Guerra Mundial. El combate había pasado una factura cruel a países importantes, incluyendo Gran Bretaña, Francia y Alemania. Estos países fueron el núcleo del mundo más avanzado e industrializado. Las interrupciones en el comercio y en el flujo de dinero continuaron después de que la guerra terminara. Más aún, los malos recuerdos del conflicto dejaron a los países resentidos entre ellos, impidiendo que se unieran para enfrentar juntos la debilitada economía global.

La intervención de los Estados Unidos en la Primera Guerra Mundial fue mínima y solo al final del conflicto que duró del 28 de julio de 1914 al 11 de noviembre de 1918. Esta intervención del país fue en contra de su tradición de no involucrarse en los asuntos de Europa. Esto resultó en que que los estadounidenses miraran solo hacia el interior de su

NEWSELA

Lexile 1020

país durante la década de 1920. Los Estados Unidos desarmaron sus fuerzas militares y su maquinaria bélica. El Senado se rehusó a aprobar el Tratado de Versalles, que era un acuerdo de paz entre Alemania y las Potencias Aliadas (principalmente Gran Bretaña, Francia, Rusia e Italia) al final de la Primera Guerra Mundial.

Se dio la espalda al resto del mundo

El Senado también rechazó la membresía en la Liga de las Naciones, pese a que había sido promovida por el Presidente Woodrow Wilson.

En 1922, el Congreso aprobó los impuestos más elevados en la historia para quienes vendieran productos extranjeros, lo que afectó el comercio entre países.

Mientras, el gobierno federal insistió durante los diez años posteriores a la guerra en que los europeos debían saldar los préstamos que habían recibido de la Tesorería de los Estados Unidos, lo que significó una carga financiera para los países que se recuperaban de la guerra.

En 1924, los Estados Unidos impusieron por primera vez en su historia límites estrictos al número de inmigrantes que podían ingresar al país cada año. Millones de personas fueron rechazadas.

De forma militar, diplomática, comercial, financiera y moral, los estadounidenses parecían estar dando la espalda al resto del mundo.

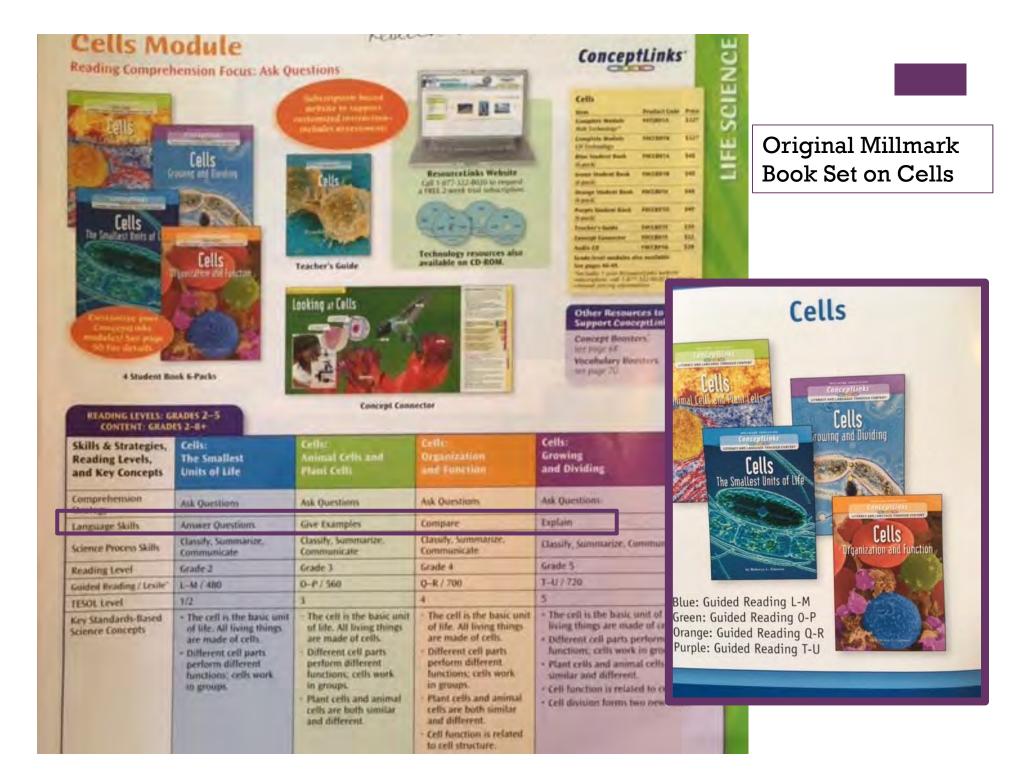
Al comenzar a desarrollarse la Gran Depresión, un sistema bancario privado y disfuncional incursionó en la era moderna provocando una fundación inestable para el crédito nacional. Entre tanto, el gasto público del gobierno era reducido y el gobierno federal se encontraba en una débil posición para combatir la depresión.

El crac bursátil revienta la burbuja

La burbuja reventó en octubre de 1929. En un evento conocido como el Crac Bursátil, los precios de las acciones se desplomaron. Miles de bancos quebraron y decenas de miles de negocios colapsaron. Millones de personas quedaron desempleadas. Herbert Hoover había sido electo pocos meses atrás y sería reconocido por siempre por su incapacidad para salvar el país de la Gran Depresión, a pesar de sus esfuerzos.

Para 1932, cerca de 13 millones de estadounidenses estaban desempleados, lo que equivalía a uno de cada cuatro trabajadores en el país. Muchos estadounidenses pensaban que estaban siendo testigos no solo de una caída masiva de los mercados, sino de un colapso de orden económico, político y social que tal vez marcaba el fin del estilo de vida estadounidense.

Franklin D. Roosevelt, conocido como FDR, fue electo presidente en 1932. Prometió "un nuevo trato para los estadounidenses". FDR trajo consigo a la presidencia y al pueblo estadounidense una creencia simple y muy importante: que la vida en Estados Unidos



Comprehension Strategies		Authentic Language Tasks		
Make Connections Determine Importance	Make Inferences Synthesize	• Restate • Describe	Give Examples Ask and Answer Questions	
• Ask Questions	Monitor Comprehension	• Compare	Show Sequence	
• Visualize		• Explain	• Persuade	





You are here: Home / Subjects / Cells

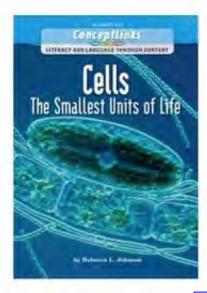
Concepts, Skills, and Strategies





Advancing Our Students' Language and Literacy

Differentiated Entry Points



The Smallest Units of Life

by Rebecca L. Johnson

Reading Level: Grade 2 Guided Reading Level: L-M

Lexile" Level: 480

TESOL Level: 1/2 Starting/Emerging

eBooks | Printed Readers

230L to 580L
360L to 720L
480L to 830L
620L to 950L

Key Standards-Based Science Concepts

- The cell is the basic unit of life. All living things are made of cells.
- · Different cell parts perform different functions

Comprehension Strategy

Ask Questions

Language Skill

Answer Questions

Science Process Skills

- Classify
- Communicate
- Summarize

CHAPTER

Parts of a Cell

Cells can have many different shapes.

Crils can be different some

But most cells have many things in common.

Most cells have a mucleus.

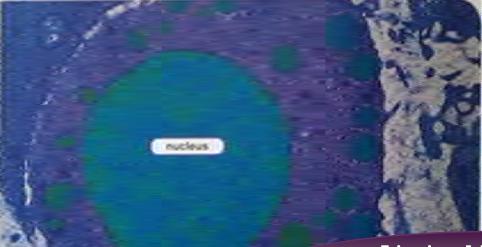
The nacion is big and usually round.

It controls everything a cell does.

Explore Language

some things in common =

Can't the Smallest was of the



All cells have smaller parts called organelles.

Each organelle has a specific jet.

Different cells have different organelles.

The pictures below show organelles in different cinds of cells.



KFT IDEAS All cells have smaller parts called organelles. Each organelle has a specific jell.

Limited Print; Simple Sentences; Strong Visuals

Chapter 2: Parts of a Cell 11

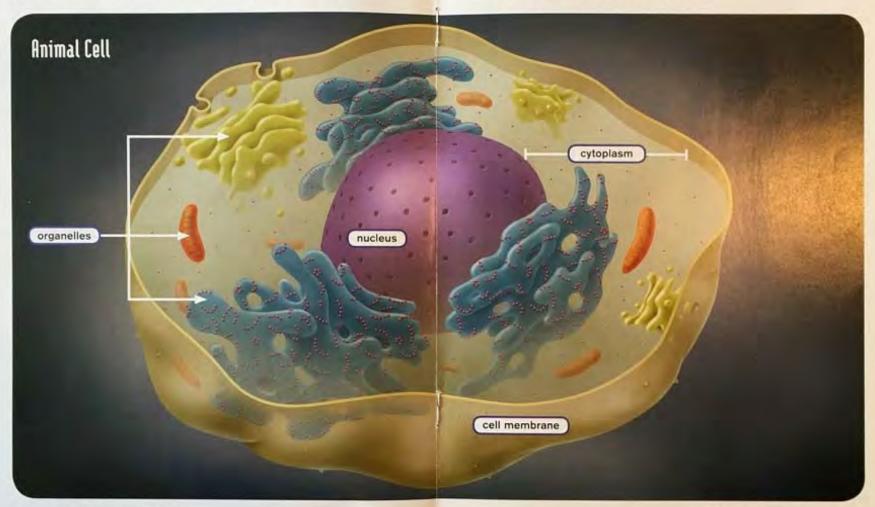
Cells have other parts, too.

All cells have a cell membrane.

The cell membrane surrounds the cell.

The cell membrane controls what enters and leaves the cell.

Inside the cell membrane is the **cytoplasm**. The cytoplasm is made up of a thick liquid and the cell's organelles. The cytoplasm holds some of the important chemicals the cell needs for life.



12 Cells: The Smallest Units of Life

Chapter 2: Parts of a Cell 13

Key Points; Text
Supported By Visuals

Some cells also have a cell wall.

The cell wall is outside the cell membrane.

A cell wall helps protect a cell.

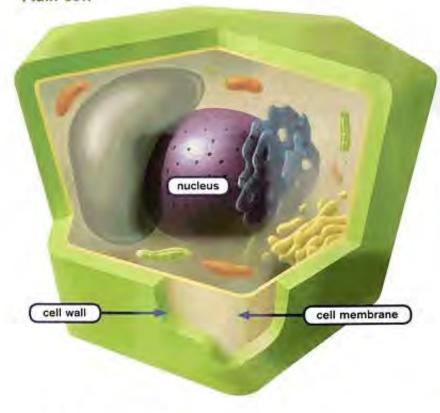
It also makes a cell stronger.

Plant cells have a cell wall. Some bacteria have a cell wall, too. Animal cells do not have a cell wall.

KEY IDEAS All

cells have a cell membrane. Plant cells and some bacteria also have a cell wall.

Plant Cell



14 Cells: The Smallest Units of Life

YOUR TURN

SUMMARIZE

Look at the picture of the plant cell on page 14.
What cell parts do you see?
Summarize the job of those parts in a chart like the one below. Talk about your chart with a friend.



Cell Part	Job in the Cell
nucleus	
cell membrane	
cell wall	Simple

Note Taking

MAKE CONNECTIONS

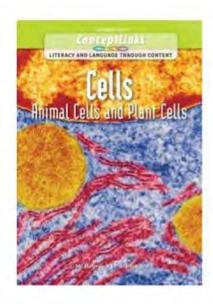
How is a cell wall like the wall of a room? How is it different? Share your ideas.



STRATEGY FOCUS

Ask Questions

Look at the diagram of a cell on page 14. What questions do you have about the diagram?



eBooks | Printed Readers

Animal Cells and Plant Cells

by Rebecca L. Johnson

Reading Level: Grade 3 Guided Reading Level: O-P

Lexile" Level: 560

TESOL Level: 3 Developing

Key Standards-Based Science Concepts

- The cell is the basic unit of life. All living things are made of cells.
- Different cell parts perform different functions

Comprehension Strategy

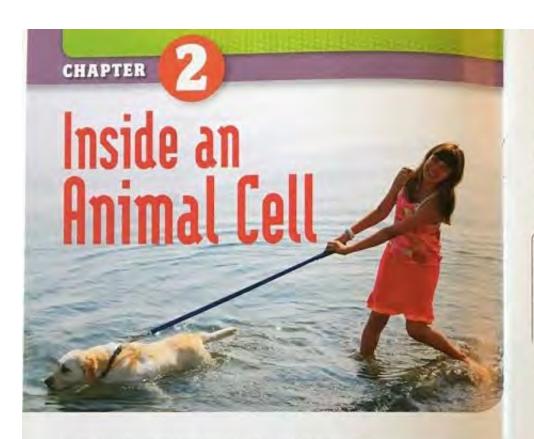
Ask Questions

Language Skill

Give Examples

Science Process Skills

- Classify
- Communicate
- Summarize



There are many small parts inside the cell. One of these parts is the **nucleus**. The nucleus controls everything that happens inside a cell.

A cell also has **cytoplasm**. Cytoplasm includes everything between the cell membrane and the nucleus. Part of the cytoplasm is a very thick liquid. The other part is made up of tiny **organelles**. Every organelle has a specific job inside a cell.

nucleus – the cell structure that controls all a cell does

cytoplasm- everything between the cell membrane and the nucleus in a cell

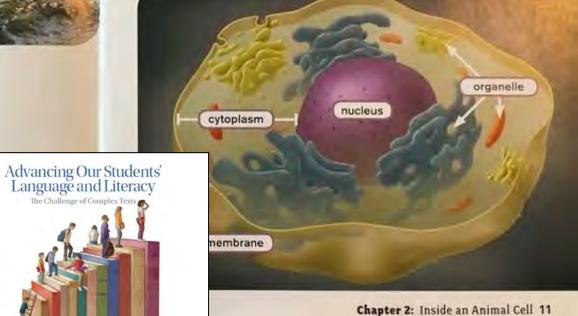
organelles – small parts inside a cell that carry out different jobs An animal cell has a cell membrane, nucleus, cytoplasm, and many organelles.

Cells are the building blocks of living things. The cells that make up animals and plants have some things in common. But they are not exactly the same. Let's take a closer look at an animal cell.

With a microscope, you can see some parts of an animal cell. A **cell membrane** covers the cell. The cell membrane controls what enters and leaves the cell.

cell membrane - a thin covering that surrounds a cell

10 Cells: Animal Cells and Plant Cells



Making Proteins

Proteins are important materials in cells. Almost every part of a cell has proteins in it. Ribosomes are very tiny organelles. The job of ribosomes is to make proteins.

New proteins move to the endoplasmic reticulum, or ER. Inside this organelle, proteins are modified, or changed.

proteins - important materials in cells ribosomes - tiny organelles that make proteins endoplasmic reticulum (ER) - an organelle that modifies new proteins modified - changed

Animal Cell

nucleus

ribosomes

mitochondrion

endoplasmic reticulm

Protein Packages and Energy

From the endoplasmic reticulum, modified proteins travel to Golgi bodies. These organelles modify the proteins a little more. Then the Golgi bodies pack proteins into little sacs. The packaged proteins move out into the cytoplasm. They go to wherever they are needed in the cell.

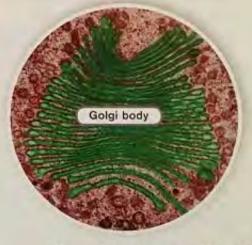
Mitochondria are other organelles. Each mitochondrion es energy. A cell gets all the energy it needs, On page Glossing ing the energy needed to make and package proteins, from its mitochondria.

> Golgi bodies - organelles that modify and package proteins mitochondria - organelles that provide energy for a cell energy - the ability to do work



Golgi body

This is a close-up photo of a Golgi body. The green color was added to show more detail.



Chapter 2: Inside an Animal Cell 13

SHARE IDEAS Explain

mitochondrion

what ribosomes do in a cell.

12 Cells: Animal Cells and Plant Cells

Providing Support

A cell has lots of small parts within its cell membrane. These parts are supported by the **cytoskeleton**. The cytoskeleton supports all of the structures in a cell. It also helps the cell keep its shape.

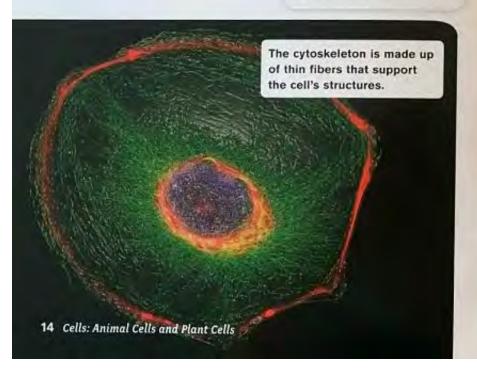
cytoskeleton - a supporting structure inside a cell

Word Study

Explore Language

cyto- = cell
cytoskeleton = a cell's skeleton

KEY IDEAS Cells contain smaller parts called organelles. Each organelle has a specific job inside a cell.



YOUR TURN

SUMMARIZE

Look at the drawing of the animal cell on pages 12–13. Make a chart like the one here. List the parts of an animal cell, and summarize the job of each part. Discuss your chart with a friend.

Animal Cell Part	What This Part Does
cell membrane	
nucleus	

Writing to Review

MAKE CONNECTIONS

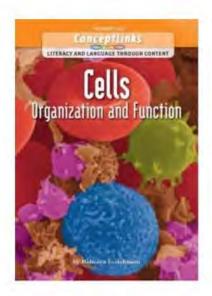
How is a cell's cytoskeleton like the skeleton in your body?





Ask Questions

What questions did you have before, during, and after reading this chapter? What questions did you answer?



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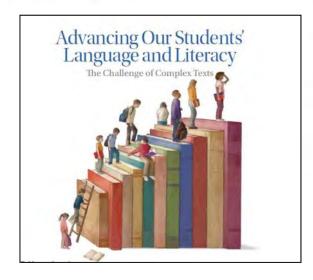
Organization and Function

by Rebecca L. Johnson

Reading Level: Grade 4 Guided Reading Level: Q-R

Lexile" Level: 700

TESOL Level: 4 Expanding



Key Standards-Based Science Concepts

- The cell is the basic unit of life. All living things are made of cells.
- · Different cell parts perform different functions

Comprehension Strategy

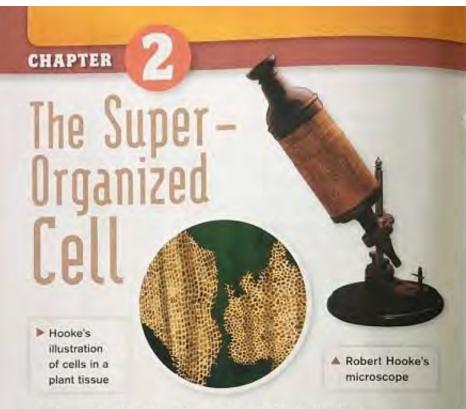
Ask Questions

Language Skill

Compare

Science Process Skills

- Classify
- Communicate
- Summarize



In the 1660s, English scientist Robert Hooke built a new kind of microscope. With it, Hooke was able to magnify a slice of plant tissue. He saw that the tissue was made up of structures that looked like small rooms. He called them "cells."

As microscopes improved, scientists were able to see inside cells. They discovered that cells contained many smaller structures. Over time, scientists figured out that the structures carry out many different jobs in a cell. They work together in very organized wave a plant cell magnified 1,000 times.

All cells are wrapped in a thin covering. This **cell membrane** protects the cell. Some things can pass through the cell membrane, other things cannot.

Just inside the cell membrane are dozens of tiny structures. The **nucleus** is one of the largest structures inside a cell. It is the cell's control center. The nucleus controls everything that happens in a cell.

cell membrane – a thin, protective covering that surrounds a cell

the cell structure that controls does



SHARE IDEAS

Explain the job of the nucleus.

magnify - make to look larger the

Progressively Adding
More Information While
Recycling Basic Facts

What Features Continue?

Little "Organs"

Cytoplasm lies between the nucleus and the cell membrane. Part of the cytoplasm is a thick liquid called cytosol. The rest of the cytoplasm is made up of tiny organelles. Like organs in a body, organelles each have a special job to do.

Ribosomes are extremely small organelles. But they have a very important job. Ribosomes make proteins. Proteins are the building blocks of most structures in a cell.

cytoplasm – everything between the cell membrane and the nucleus

cytosol - the liquid part of cytoplasm

organelles – small structures inside cells

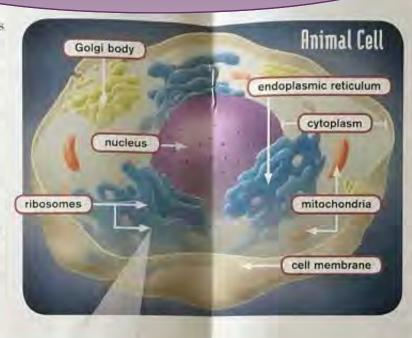
that carry out specific Jobs

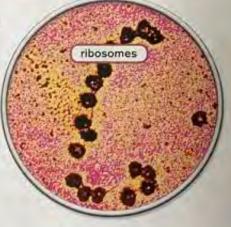
ribosomes – tiny organelles that make proteins

proteins - building blocks of most structures in cells

Explore Language

-elle = little organelle = little organ





KEY IDEAS A cell

contains an
organized group of
small structures
called organelles.
Each organelle
does a specific job
in a cell.

Sending Proteins on Their Way

From ribosomes, proteins go to the endoplasmic reticulum, or ER. Proteins are modified, or changed, inside the ER.

From the ER, modified proteins go to Golgi bodies. These organelles modify the proteins a little more and package them into little sacs. The sacs of proteins travel to wherever they are needed in the cell. They move with the help of the cytoskeleton. The cytoskeleton helps structures stay organized inside the cell.

Here and there in the cytoplasm are large, bean-shaped organelles. These **mitochondria** are a cell's powerhouses. They supply the energy needed for all of a cell's activities.

endoplasmic reticulum – an organelle that modifies newly made proteins

modified - changed

Golgi bodies – organelles that modify and package proteins

cytoskeleton – a supporting structure inside a cell

mitochondria - energy-supplying organelles

Animal Versus Plant

Animal cells and plant cells are very similar. But they are not exactly the same. Plant cells have a few structures that animal cells don't have.

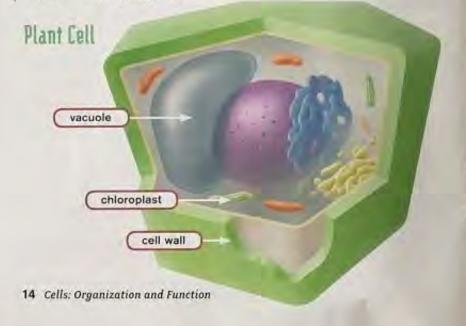
All plant cells have a **cell wall**. The cell wall surrounds the cell membrane. It supports and protects a plant cell. Most plant cells also have **chloroplasts** and a large **vacuole**. Chloroplasts use energy from sunlight to make food for a plant. The vacuole stores water and other substances.

cell wall - a tough covering that surrounds plant cells

chloroplasts – green organelles that use energy from sunlight to make food

vacuole - a storage organelle

KEY IDEA Plant cells have structures that animal cells do not have.



YOUR TURN

SUMMARIZE

Look at the chart below, in a notebook, draw an animal cell and a plant cell. Using the chart and the pictures in Chapter 2 as a guide, sketch each cell's organelles and other structures.

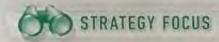
Label them. Share your drawings wit

Simple Checklist

Compare Plant and Animal Cells				
Structure	Animal Cell	Plant Cell		
nucleus	1	1		
cell membrane	/	1		
cytoplasm	1	1		
ribosomes	1	1		
endoplasmic reticulum	1	1		
Golgi bodies	1	1		
cytoskeleton	1	1		
mitochondria	1	1		
cell wall		1		
vacuole		1		
chloroplasts		1		

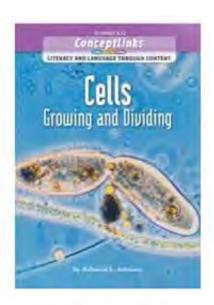
MAKE CONNECTIONS

Your brain is an organ. It controls most of what happens in your body. How is your brain like the nucleus in a cell?



Ask Questions

What questions did you have before, during, and after reading this chapter? What questions did you answer? Tell where you found the answers.



eBooks | Printed Readers

Growing and Dividing

by Rebecca L. Johnson

Reading Level: Grade 5 Guided Reading Level: T-U

Lexile Level: 720

TESOL Level: 5 Bridging

Key Standards-Based Science Concepts

- · The cell is the basic unit of life. All living things are made of cells.
- · Different cell parts perform different functions

Comprehension Strategy

Ask Questions

Language Skill

Explain

Science Process Skills

- · Classify
- Communicate
- Summarize

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USE LANGUAGE TO GIVE EXAMPLES

Words that Give Examples

When you give examples, you give more information about something. Certain phrases show that you are giving an example.

EXAMPLE

One-celled living things include bacteria and algae.

Animals such as frogs and sloths are many-celled living things.

The sloth has many organs. For example, its eyes, heart, lungs, and liver are organs.

With a friend, talk about organelles. Give examples of different organelles and the jobs they do.



Write an Example

Choose an animal. Give an example of an organ system that animal has.

- Start with a general statement about the organ system.
- Give examples of organs in the organ system.
- Illustrate the organ system and label the organs.

Words You Can Use

for example such as one of these is include

Use Language to Give Examples

Words that Compare

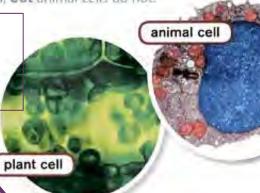
When you compare, you tell how things are alike and different.

The word **both** shows that things are alike. The connecting words **but** and **however** signal differences.

EXAMPLE

Animal cells and plant cells **both** have cell membranes. Plant cells also have cell walls, **but** animal cells do not.

With a friend, compare plant and animal cells. Tell how they are alike and different.



Write a Comparison

Animals, including humans, can have similar organ systems. Compare the digestive system or respiratory system of two animals.

- Tell what the organ system does for both animals.
- · Tell how the organ systems differ.

Words You Can Use

Comparison Words

both

like too

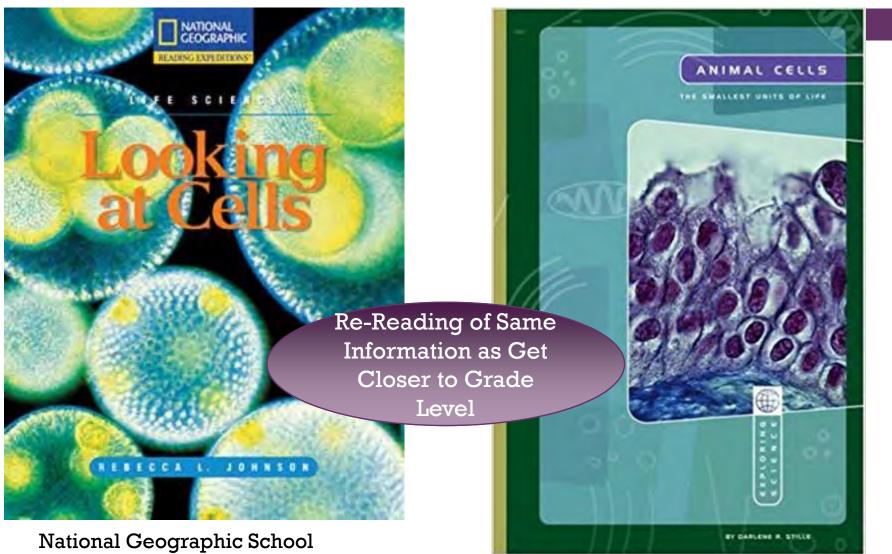
in some ways in common

same

but

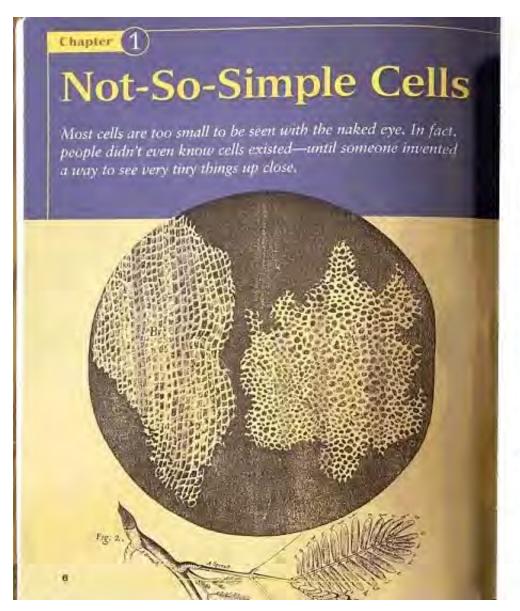
however

Books 2 and 3



National Geographic School
Publishing, 2003
Reading Expeditions/Life Science
Rebecca L. Johnson, Author
GRL W-X
Lexile 870

Compass Point Books, 2006 Exploring Science/Life Science Darlene R. Stille, Author Grade Level 7.4 Lexile 1030



Looking at Cells, National Geographic Reading Expeditions; Life Science Lexile 870 (5th/6th)

The tool that allowed people to peer into the world of cells is the microscope. Leeuwenhoek's microscopes had just one lens, a small, round piece of polished glass shaped so that it would magnify objects.

Other people were using microscopes that had two flatter lenses, one at each end of a long tube. In about 1665 English scientist Robert Hooke used such a microscope to look at thin slices of the cork plant. To Hooke, the magnified cork seemed built of little compartments. He called them cellulae, which is Latin for "small rooms." That's how cells got their name.

As years passed, microscopes improved. Scientists used them to study parts of many plants and animals in great detail. By the 1800s, people realized that all living things were made up of one or more cells. Scientists saw many different kinds of cells under their microscopes. Most of those cells shared three basic features—a membrane, a nucleus, and cytoplasm.



The Cell Membrane

Surrounding every cell is a **cell membrane**. At first scientists thought this membrane simply held the cell together and kept everything inside from leaking out. Today we know that the cell membrane does much more. It allows some things, like certain chemicals, to pass into or out of the cell; it keeps others out.

■ Robert Hooke's drawings compare the structure of honeycomb (right) with cork.

17th-century

microscope

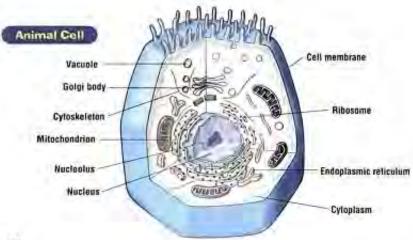
Recycling of Information and Chances to Practice are CRITICAL for ELLs

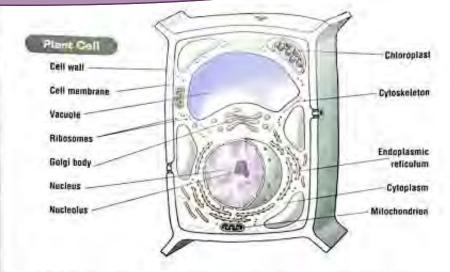
The Factory

Step out of the main office and you'll practically run right into ribosomes. These tiny, rounded organelles are like factory robots. Ribosomes make chemicals called proteins. They use plans sent from the nucleus to build different kinds of proteins. They build proteins by putting together small chemicals found in the cytoplasm. Inside the nucleus, there's a dark spot—the nucleolus—that helps make ribosomes.

Some ribosomes are plastered onto the sides of the endoplasmic reticulum, or ER for short. The ER

is a maze of riny curving, branching tubes. It's the "assembly line" in the cell factory. Newly made proteins enter at one end. As they move along, as if on a conveyor belt, they are tweaked here and changed a bit there. When "finished" proteins reach the end of the ER, the tip pinches off to form a little sac. This little sac cruises through the cytoplasm and bumps into the Golgi body. The Golgi takes in the proteins, changes them a bit more, and then sends them off in another little sac. Many of these protein packages move to the cell membrane and are released to the outside.





The Power Plant

All factories have a power plant to provide the energy to run the equipment. Mitochondria are the power plants inside cells. They contain the chemical machinery needed to break down sugars. The energy that is released makes the work going on in a cell possible.

In addition to a power plant, some factories also have solar panels that make electricity from sunlight. In a cellular factory, **chloroplasts** have a similar job. These organelles are found in the cells of plants and other living things that use sunlight to make their own food.

The Storage Rooms

Every factory has storage rooms, where products and materials are stored. Vacuoles are the storage rooms inside cells. They are filled with chemical products the cells have made.

The cell's cytoskeleton is a framework that supports the cell, like the beams and walls that support a factory building. Unlike a factory's framework, the cytoskeleton can flex and change shape.

How are plant and animal cells alike and different?

Explore Strategies for Actively Engaging FLLs in Language

- + Engaging ELLs in Language
 Practice within Integrated
 ENL/Content Area Settings
 - Listening/Reading
 - Speaking/Writing



Practicing Academic Listening and Speaking

Choosing Videos For Beginners:

Rate of speech, pauses

Repeating vocabulary

Good visuals to go along with the words

Short video—2-3 minutes max.

Interesting to watch more than once

- Techniques When Showing Videos
- Frontload Vocabulary
- **■** Freeze Frame
- Pause, Replay
- **Discuss After Each Section**
- **Capture Gist**

1		
Name	Date	
Title of story	Author	

Anticipation Guide

Use the following anticipation guide to preview a story before you read it. Before reading, mark whether or not you agree or disagree with each statement. After reading the story, fill in the page number where you found the answer to each statement, tell whether or not you were right, and reflect on what you found.

	Agree/Disagree	Page #	Were you right?	Reflect
1.				
2.				
3.				
4.				
5.			tatements as	
6.	_		that Could B ne Anticipatio	
7.		C	Guide	



The Great Depression Era

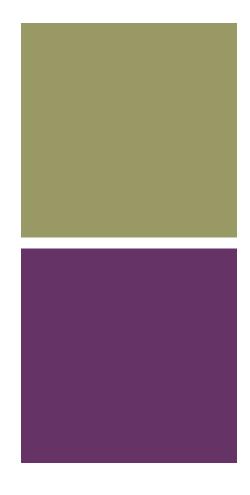
https://m.youtube.com/watch?v=f8k0jJdqKP0

https://www.youtube.com/watch?v=Wp-M5mWrc2A

Featured Video

Focused Viewing

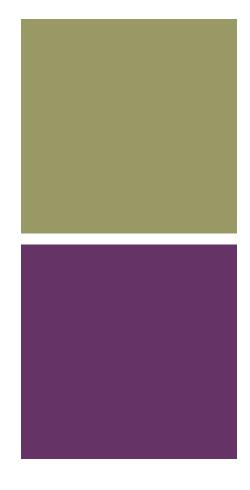
What was life like in the 1920's? List all the things that happened after the crash of 1929 List all the things that happened after the to live/survive the crash	e after
	_



+

Cell City: Rap

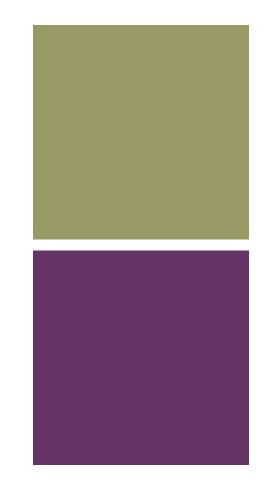
https://www.youtube.com/watch?v=u4ki28XLzOA





Cell Song

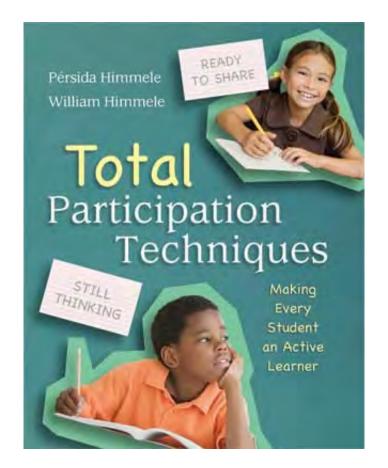
https://www.youtube.com/watch?v=rABKB5aS2Zg



* Cell Structure Rap: Practice of Terms

https://www.youtube.com/watch?v=-zafJKbMPA8

*Total Participation Techniques





- Thumbs Up/Pencils Up
- Stand Up/Sit Down
- Hold-Up Cards
- Response Boards

Simple TPTs to Check In On ELLs

Total Participation Techniques

+

- Hold-up response cards (yes/no; true/false or specific answers) or write their responses on whiteboards to hold up for the teacher to see
- Quick draws/writes, chalkboard splashes (all the students write their responses on assigned spots on the classroom whiteboard/blackboard or on chart paper; then students respond to similarities, differences and surprises), ranking activities, and so forth). Himmele & Himmele (2011)

Activity

Partner A:

Review #4 On-the-spot TPTs

Partner B: Review #5 TPT Hold-Ups

Partner C: Review #6 TPTs
Involving Movement

Share 2 Ideas from the Page You Read—Ones you don't use much!

Think-Pair - Share

- Ask students to reflect on a question or prompt, Give them a BRIEF amount of time to form a response.
- 2. Have students turn to a partner
- 3. Have partners share their responses

Ouick Writes

- Select a prompt that you would like students to address
- Give students time to collect their thoughts and jot down a response
- 3. Follow up with a pair-share

Quick Draws

- Select a big idea or major concept in your lesson
- Ask students to reflect on the meaning of the concept and create a visual image that represents that concept
- 3. Have students share and explain their image with a partner.

Chalkboard Splash

- Create a sentence starter, prompt, or question to which you want all students to see the class' responses.
- As students provide answers, have them put their response in a specific place on the chalkboard or SmartBoard.
- Debrief with the students reading the different answers and jotting down differences, similarities, and surprises.
- 4. Ask students to share in small groups.

Thumbs-Up When Ready

- 1. Ask students to reflect on your prompt
- Explain when they are ready, they should put their thumb up
- You can add a pair-share to allow demonstration of what they know.

Ranking

- Select items, concepts, steps, events, descriptions, etc.
- Ask students to rank them according to criteria you have provided.
- Ask students to provide justification for the way they chose to rank the concepts.

Processing Cards

- Give students processing cards (one side says thinking the other says ready to share)
- Have students place the "still thinking" side up while they finish the task.
- When they are complete with the task, students should turn the card to "ready to share"
- Be sure to have an in-between activity to give students who finish up early something to do while waiting on their neers.

Similes

- Create similes using some of the topics you are studying
- 2. Ask students to formulate an explanation for how the simile might be true
- 3. Ask students to share with a small group
- After they have been modeled, have students create their own.

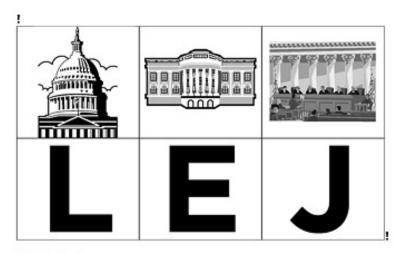
Numbered Heads Together

- Have the students count off (1-4) so each group member is assigned a number. (Be sure to confirm student numbers)
- Inform students that all group members will have to report their group's information. Once group work is over, select a number to report out.
- 3. Call on a team and have the student with the selected number report out.

Thumbs Up/Down Vote

- 1. Ask a yes/no or agree/disagree question
- 2. Ask students to give a thumbs-up if they vote yes or a thumbs-down if they vote no.
- 3. Be sure you have all students vote so do not move on until they have all voted.

Excerpts from Chapter 4
Total Participation Techniques,
Himmele & Himmele
pgs.31-48



Number Cards

1	2	3
4	5	6
7	8	9
	0	

TRUE	NOT TRUE
TRUE WITH MODIFICATIONS	UNABLE TO DETERMINE BASED ON INFORMATION LEARNED

Multiple-Choice Hold-Up

A	В
C	D

1



GIST: Exploring Tough Text

SELECT THE TEXT (a few paragraphs or short sections of text)

MODEL THE STRATEGY

- Teacher reads aloud the text and thinks aloud about how s/he will summarize the passage.
- Discuss how to write summary statements.

PRACTICE THE STRATEGY

- Teacher & Students practice together with the next section of text; teacher reads the text aloud and students help the teacher create the summary statement
- Students work in pairs or small groups to read the next section and create their own summary statements

COMPARE & EVALUATE

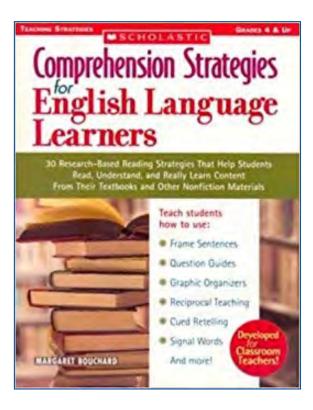
- Groups share and compare their summaries with the rest of the class
- The class evaluates the statements for clarity, conciseness, and relevance.

Adaptations of GIST for ELs

- Limit the sentence length for each summary statement.
- After several sections, combine the summary statements into a 20, 40, or 50 word summary statement/ paragraph

Limiting sentence length helps Transitioning and Expanding ELs make concise summarizing statements and paragraphs and become familiar with American expectations of expository writing.

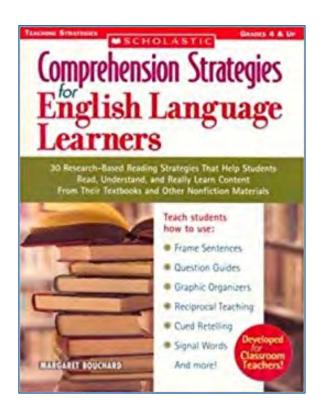




About-Point Activity Sheet

Paragraph or Section:	
Paragraph or Section:	
Paragraph or Section:	
Paragraph or Section:	
	Paragraph or Section: Paragraph or Section: Paragraph or Section:

Metacognitive Strategies



Coding Text

ENGLISH LANGUAGE LEVEL

Speech Emergence to Proficiency

KEY VOCABULARY

- code
- HIERONS.
- "stants for"
- Slicky note

RESEARCH BASE

Alvermann, D.E. (1982)

Ambruster, B.B. & Anderson, T.H. (1981)

Kulhavy, R.W., Dyer, J.W., & Silver, L. (1975) Purpose Coding text is a form of annotation that allows students to monitor their comprehension while reading.

Key Benefits for ELLs: Coding text gives students a method to react to text and express their thinking while reading. It helps ELLs to identify unknown language or concepts. Often by the time the text is completely read, students have forgotten what areas might have been challenging or what the important points were. Therefore, it is a helpful tool in aiding ELLs to identify and remember important information or challenging words/concepts.

After learning the coding strategy, students may want to devise their own personal system. Provide an opportunity for them to brainstorm codes with you.

Sample codes:

I or ! for important

C or ? for confusing

U or draw a circle around an unknown word or term PK or * for prior knowledge (students can relate to previous knowledge). This is particularly significant for ELLs who may have covered the content in their native country.

Procedure

- The most effective way to teach coding is to model it on an overhead projector. Use a think aloud format. Choose a uniform code with a few possibilities. Starting with too many codes may cause confusion.
- 2. Copy a section of text to show on the overhead.
- 3. Give each student a copy of the text.
- Read the text aloud and model "thinking" while reading. For example,
 pretend to come across an unknown word and mark it with the correct
 code. Continue this for other areas such as important facts or ideas,
 confusing concepts, and so on.
- Ask students to read the text and code it accordingly.
- After they are finished coding the text, discuss the results and answer questions.

+ Use of the Native Language in Integrated Content Area Classes

Science and Social Studies

+ Native Language Resources

https://velazquezpress.com/



Social Studies

Science



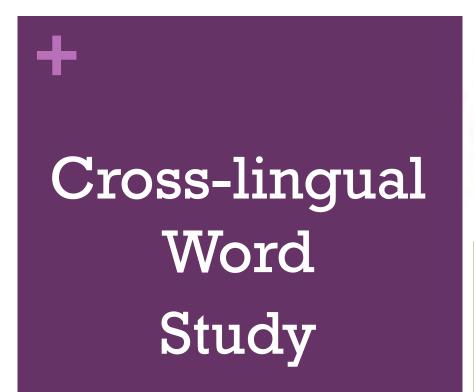
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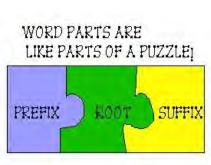
Cognates

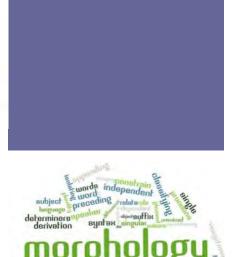
http://spanishcognates.org/search/node/economy

http://spanishcognates.org/search/node/cell



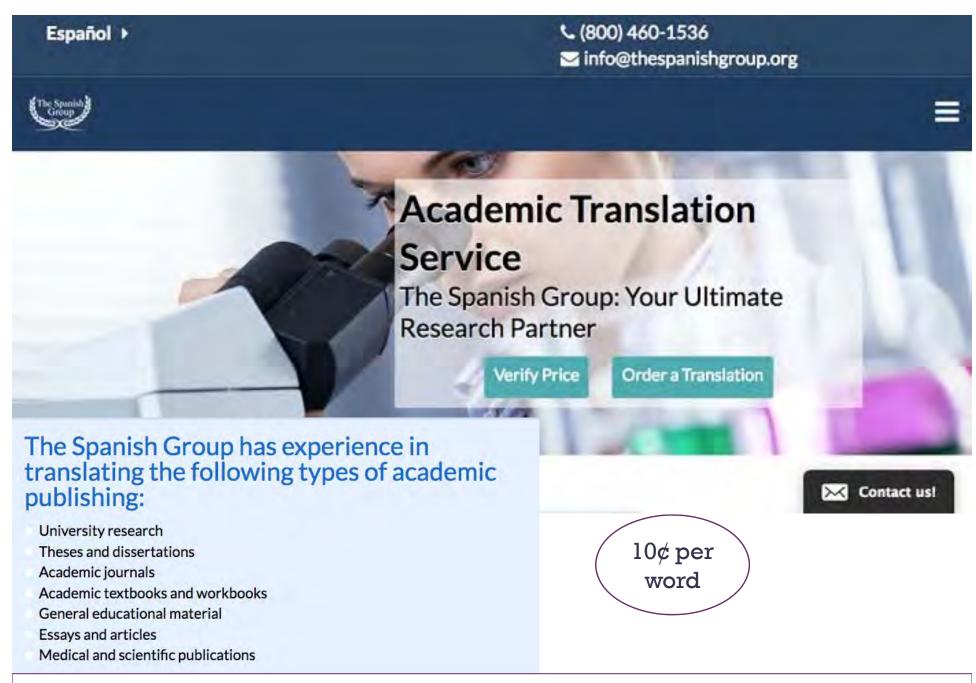








Prosperity----prosperidad (-ity/-idad) reality—realidad



https://thespanishgroup.org/translations/academic-and-educational-spanish-translation-service/

How Will You Assess All Your Objectives?

■ Observation?

+

- **■** Conferences with Students?
- **Work Samples?**
- Quizzes/Tests
- **Exit Tickets?**
- **■Rubrics?**
- Rating scale?

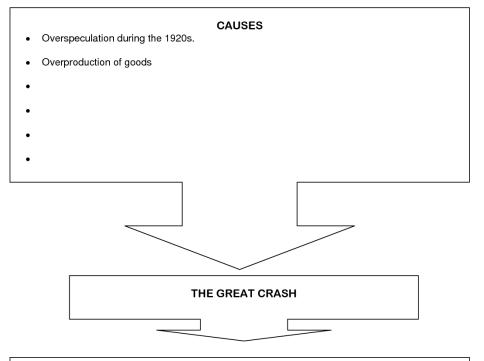
Peer Assessment? Self-Assessment?



The Stock Market Crash

Chapter 22, Section 1 pp. 740-744

<u>DIRECTIONS</u>: As you read, complete the following graphic organizer to show the causes and effects of the Stock Market Crash of 1929. Then answer the questions that follow.

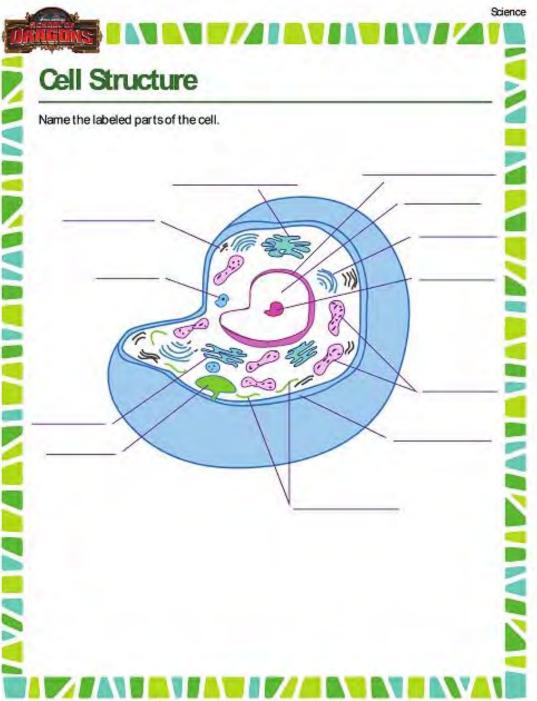


EFFECTS

- Investors and Businesses lose millions
- Thousands of banks fail, savings are wiped out
- •
- •
- •
- •

Graphic Organizer Completion

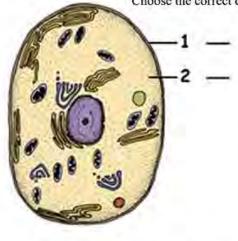
(continued)



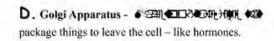
Graphic Fill In

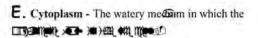
The Organelles

Choose the correct description for each organelle.

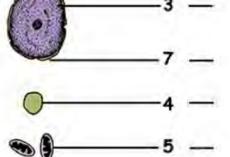


- A. Mitochondria Double-membraned organelles that break down sugar to make ATP to be used as energy by the cell.
- **B**, Lysosome Vesicles with digestive enzymes to break down waste and bacteria.
- C. Plasma Membrane The protective outside layer of the cell that lets some things in and keeps others out (semipermeable).





- F. Nucleus The organelle that contains all our genetic information 23 pairs of chromosomes making up our DNA.
- H. Nuclear Membrane Surround the nucleus and controls what goes in and out.
- I. Vacuoles Membrane sacs for storage.
- **J**. Rough Endoplasmic Reticulum (rough ER) -Folded membrane pathways spotted with ribosomes and making new membranes as needed.



10 -

Matching

Sheri Amsel

www.exploringnature.org

INFORMATIVE WRITING Topic Sentence: Fact # I: Fact # 2: Fact # 3: Fact # 4:____ Closing Sentence:

Take from fill in and matching to Essay
Writing

NAME	DATE	BLOCK #
CH. 18 CL	OZE PASSAGE - Causes & Impact of the	Great Depression
Directions: Read the a word for each blank	following selection carefully. The goal of space that most accurately completes the s	the cloze passage is to selectentence.
Causes: One of the major	of the Great Depression	over
speculation on stocks	borrowed money that could	be repaid
when the	market crashed in 1929	stock prices collapsed.
Another	was the Federal Reserve's	to prevent widespread
collapse	the nation's banking in	the late 1920's
early l	930's, leading to contraction	on in the nation's
of mon	ney in circulation third maj	or cause of
Great Depression were	e the protective tariffs that p	oroduced
tariffs in other countrie	es, world trade (Tariff Act _	1930,
popularly called the	- Smoot Act).	
Impact: The most visible effect	ts the Great Depression wer	e and
homelessness. The col	llapse the financial system l	ed hundreds
of bank closings	Political unrest including the	militancy of
labor unions	strength to new political	including Communism
which was	the rise in the States. F	inally, farm foreclosures
migration	on as a result the Dust Bow	l led to
leave the Midwest	search of jobs and	_ opportunities in places
like .		

Cloze Passage—5th word deletion scheme

Word Box

causes
was
stock
investors,
not
Etc.



What was one idea you got today that will really help you plan integrated language instruction for your ELLs?

What was one strategy you got today that you plan to use in your integrated ENL classroom right away?

What else was useful to you from today's PD?



Nancy Cloud ncloud@ric.edu nancycloud2@gmail.com

