



Standard #: LAFS.910.RST.1.2

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Determine the central ideas or conclusions of a text; trace the text’s explanation or depiction of a complex process, phenomenon, or concept; provide an accurate summary of the text.

Subject Area: English Language Arts	Grade: 910
Strand: Reading Standards for Literacy in Science and Technical Subjects 6-12	Idea: Level 2: Basic Application of Skills & Concepts
Cluster: Key Ideas and Details -	Date Adopted or Revised: 12/10
Content Complexity Rating: Level 2: Basic Application of Skills & Concepts - More Information	Date of Last Rating: 02/14
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Related Courses

Course Number	Course Title
2001350:	Astronomy Solar/Galactic (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2000310:	Biology 1 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2000320:	Biology 1 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2003350:	Chemistry 1 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2001310:	Earth/Space Science (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2001320:	Earth/Space Science Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2002400:	Integrated Science 1 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2002410:	Integrated Science 1 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2002420:	Integrated Science 2 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2002430:	Integrated Science 2 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2003310:	Physical Science (Specifically in versions: 2015 and beyond (current))
2003320:	Physical Science Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2003600:	Principles of Technology 1 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2003610:	Principles of Technology 2 (Specifically in versions: 2014 - 2015, 2015 - 2018 (course terminated))
2002330:	Space Technology and Engineering (Specifically in versions: 2014 - 2015, 2015 - 2018 (course terminated))
2000800:	Florida’s Preinternational Baccalaureate Biology 1 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2002340:	Experimental Science 1 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2002350:	Experimental Science 2 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
0500310:	Executive Internship 2 (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
1700370:	Critical Thinking and Study Skills (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
7920015:	Access Biology 1 (Specifically in versions: 2014 - 2015, 2015 - 2018, 2018 and beyond (current))
7920020:	Access Earth/Space Science (Specifically in versions: 2014 - 2015, 2015 - 2018, 2018 and beyond (current))
7920025:	Access Integrated Science 1 (Specifically in versions: 2014 - 2015, 2015 - 2018, 2018 and beyond (current))
2000315:	Biology 1 for Credit Recovery (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2000500:	Bioscience 1 Honors (Specifically in versions: 2014 - 2015, 2015 and beyond (current))
2002405:	Integrated Science 1 for Credit Recovery (Specifically in versions: 2014 - 2015, 2015 - 2020 (course terminated))
2002425:	Integrated Science 2 for Credit Recovery (Specifically in versions: 2014 - 2015, 2015 - 2020 (course terminated))
7920022:	Access Physical Science (Specifically in versions: 2016 - 2018, 2018 and beyond (current))
2001341:	Environmental Science Honors (Specifically in versions: 2016 and beyond (current))

Related Resources

Text Resource

Name	Description
"Designer" Chromosome for Brewer's Yeast Built from Scratch:	This informational text resource is intended to support reading in the content area. Scientists have been able to create a synthetic functioning chromosome (<i>Saccharomyces cerevisiae</i>) found in yeast. With this breakthrough, they might be able to create customizable bio-fuels, vaccines, or even synthetic organisms in the future.
A Fuel Cell for Home: Tested in Private Households:	This informational text resource is intended to support reading in the content area. Scientists at the Fraunhofer Institute in Dresden have developed an energy-efficient fuel cell superior to combustion engines and other traditional ways of heating homes. The stacked fuel cells convert natural gas directly into electrical energy without resulting in energy loss. The fuel cell prototypes are being tried in homes and signal promise for the future.

A Living Fossil:	This informational text resource is intended to support reading in the content area. In 1996, a team of scientists discovered a species of rodent in Laos that was new to science. In a recent study, DNA analysis places the rodent in a mammal family that was previously thought to have gone extinct over 10 million years ago. Therefore, the rodent is a "living fossil."
A Plant Enemy's Enemy:	This informational text resource is intended to support reading in the content area. Did you know that plants call for help when insects attack them? Well...not really, but they do release a chemical odor which "calls for help" to the predators of plant-eating insects in order to fend off an attack. Scientists have developed strategies that utilize this mechanism to help protect agricultural plants from pests.
All We Are is Dust in the Interstellar Wind:	This informational text resource is designed to support reading in the content area. The article describes cosmic dust and the effects it leaves on the galaxy when it comes in contact with astronomical phenomenon. The interstellar dust can cause a distortion of astrological observations, called reddening. This can cause false data being reported because, for one, color is used to determine the age of a star. The article addresses how astronomers have produced a 3-D map of interstellar reddening for three-quarters of the visible sky.
Annual Antarctic Ozone Hole Larger and Formed Later in 2015:	This informational text resource is designed to support reading in the content area. The text provides information about 2015's ozone hole, showing why it is larger this year and lasted longer than previous years. The article shows how the protective ozone layer changes with the seasons and is different each year. Although the hole is large this year, the practices that have been followed since the Montreal Protocol was enacted have allowed the ozone hole to slowly decrease, and it should be back to 1980 levels by 2070.
Bacteria Learn New Trick:	This informational text resource is intended to support reading in the content area. This article shows how, through experimentation, bacteria evolve over a short period of time. The E.coli bacteria show the ability to eat a new food, citrate, after 13,000 generations of gene mutation.
Bacteria and Fungi Together: A Biofuel Dream Team?:	This informational text resource is intended to support reading in the content area. The text describes use of bacteria and fungi to share the process of changing cellulose in corn husks to isobutanol. In contrast to current methods of producing biofuels, this process requires a simple, one bioreactor process.
Birds Have Clever Solution for a Cuckoo Conundrum:	This informational text resource is intended to support reading in the content area. The text describes how Australia's superb fairy wrens have developed a solution to the parasitism of the cuckoos that lay their eggs in their nests. The wrens' adaptation of singing to incubating eggs allows the unborn babies to learn the call as a password. Once born, the babies repeat this call to the mother so she can feed them and not the parasitic cuckoos.
Chemists Expand Nature's Genetic Alphabet:	This informational text resource is intended to support reading in the content area. This article provides some of the newest and most exciting information relating to the DNA in living things. It is a synopsis of a recent experiment in which scientists were able to successfully add two new "letters" into DNA and have the cell replicate these new bases. This could lead to advances in genetics, medicine, and various other fields of study.
Climate Change Affects Forest Floor Ecosystem:	This informational text resource is intended to support reading in the content area. The article presents experimental results from an investigation of how the amount of rainfall, predicted by climate change models, affects fungal decomposition on the forest floor. It discusses how spiders, springtails, and fungi form an important part of the nutrient-cycling food web in a forest ecosystem and how decomposition rates are influenced by precipitation in unique ways.
Coastal Blue Carbon:	This informational text resource is designed to support reading in the content area. The text describes different ecosystems that store carbon, like forests, and goes into how carbon is stored more efficiently in coastal ecosystems. The text goes on to advocate for conserving and protecting our coastal ecosystems to keep the carbon stored and prevent the carbon from being released into the atmosphere to further impact the planet through climate change. The text also explores other benefits for conserving coastal ecosystems.
Cone Snail Venom Reveals Insulin Insights:	This informational text resource is intended to support reading in the context area. The text describes how cone snail venom, a simpler form of insulin than human insulin, works more rapidly. Diabetes is a disease that occurs when the body is no longer to control the glucose levels in the bloodstream. Cone snail venom could help scientists develop a better, more efficient way of treating diabetes.
Cool Jobs: Planet Protectors:	This informational text resource is intended to support reading in the content area. Scientists are looking into newer, futuristic technologies to help humans do less damage to our environment. This article focuses on three very exciting solutions—leafy walls, water conservation, and solar cells—that are close to becoming realities.
Deforestation: Facts, Causes & Effects:	This informational text resource is intended to support reading in the content area. This article explains the causes and locations of deforestation and explores the environmental consequences that occur because of the practice.
Do Diamonds Really Come from Coal?:	This resource is intended to support reading in the content area. This article debunks a popular Superman myth. Even though diamonds and coal are both different forms of carbon, and pressure is a key part of turning carbon into diamonds, the author explains why Superman cannot crush coal to make diamonds. The article goes on to explain how diamonds are actually formed.
Does Sour Cream Cause Bike Accidents?:	This informational text resource is intended to support reading in the content area. Many people are confused about the concept of correlation versus causation. To help demonstrate the misconception in a light and humorous way, this article describes the work of Tyler Vigen. The Harvard student graphs data that are highly correlated but clearly unrelated. The "spurious correlations" help debunk the myth that if there is a correlation, then there is a causal relationship. The article emphasizes that rational human thought is essential to process the relationships and is necessary for studying statistics.
Environmental Pressures at the Top of the Earth Produce Evolutionary Impacts:	This informational text resource is designed to support reading in the content area. The text presents a picture of how and why animals and people living at the Arctic will start to change (due to changing climate with melting sea ice) in order to keep surviving.
Fancy a Balloon Ride to the Stratosphere?:	This informational text is intended to support reading in the content area. The article describes a new mini spacecraft that allows individuals to rise peacefully by balloon into the stratosphere.
Feeding Birds in Your Local Park? If They're White Ibises in Florida, Think Twice:	This informational text resource is designed to support reading in the content area. The text describes the interactions between local wildlife (white ibises in Florida) and humans, and the impact that these interactions have on both species. The article presents both benefits as well as potential drawbacks to the close proximity of humans and white ibises. The article also describes how scientists are studying these interactions and their effects.

Fireworks!:	This informational text is intended to support reading in the content area. The article describes the composition and workings of fireworks. Details are also given as to how the colors, lights, sounds and propulsion are produced by fireworks' components.
For the First Time, Bees Declared Endangered in the U.S.:	This informational text resource is designed to support reading in the content area. The text describes how for the first time bees have been declared endangered in the United States. Seven species of Hawaiian yellow-faced bees have been decimated by invasive species and habitat loss and are now federally protected. The text goes on to describe an innovative way scientists want to help the bees.
Genetics Provide New Hope for Endangered Freshwater Mussels:	This informational text resource is designed to support reading in the content area. The article explains the impact of scientists' studies on a number of freshwater mussel species and their genetic makeup. The intent of the research was to find ways of protecting threatened and endangered species of mussels. The article explains that the genetic similarities of species that cohabitate a river could lead to development of new methods of protecting mussel species.
GM Mosquitoes Succeed at Reducing Dengue, Company Says:	This informational text resource is designed to support reading in the content area. The article describes a recent study that allowed researchers to prove the benefits of releasing GM mosquitoes in Brazil in order to decrease disease transmission. At first, research showed that the mosquito population had dropped, but then the research also showed that diseases like dengue fever had dropped dramatically in comparison to areas with conventional mosquito control.
History Of Chemistry/Famous Chemists:	This informational text resource is intended to support reading in the content area. This article describes the history of chemistry through the scientific findings and major contributions of several important chemists. These chemists, including Joseph Priestly, Dmitri Mendeleev, and Niels Bohr, discovered properties of gases and other materials, developed the Law of Conservation of Mass and the periodic table, and contributed to the development of atomic theory.
How & Where Hurricanes Form:	This informational text resource is intended to support reading in the content area. This article could be called "the life and times of hurricanes," as it explains not only the formation but also the characteristics of hurricanes, including how they gain and lose strength.
How Cells Take Out the Trash:	This informational text resource is designed to support reading in the content area. The text focuses on cellular waste and describes different ways a cell gets rid of waste. The text also briefly addresses how further study of the ways cells dispose of waste could lead to new approaches for preventing or treating disease.
How the Ingenious Mushroom Creates Its Own Microclimate:	This informational text resource is intended to support reading in the content area. The article explains the mushroom's ability to make its own microclimate. Through convection caused by the release of water vapor, mushrooms can efficiently disperse spores.
How to Win at Rock-Paper-Scissors:	This informational text resource is intended to support reading in the content area. This article describes a new study about the game rock-paper-scissors. The study reveals that people do not play randomly; there are patterns and hidden psychology players frequently use. Understanding these potential moves can help a player increase their winning edge. As part of interpreting the results of the study, the article references the Nash equilibrium and the "win-stay lose-shift" strategy.
In a Grain Of Golden Rice, A World of Controversy Over GMO Foods:	This informational text resource is intended to support reading in the content area. This text discusses the origins of, and controversy surrounding, Golden Rice, a genetically modified food that could potentially provide beta-carotene to millions in Africa and Asia.
In Grasslands, Longer Spring Growing Season Offsets Higher Summer Temperatures:	This informational text resource is designed to support reading in the content area. The article describes the process the researchers use to develop a detailed model of how they predict climate change will occur in the future and what effect this will have on North American grasslands. The author explains how climate change impacts ecosystems while also providing an example of using models in science to predict future events/outcomes.
IVF Pioneer Wins Medicine Nobel Prize:	This informational text is intended to support reading in the content area. This article covers the topics of In Vitro Fertilization (IVF), bioengineering, the scientific pioneers, and the ethical debate surrounding it.
Male Faces May Have Evolved to Be Punch-Resistant:	This informational text resource is intended to support reading in the content area. The article describes new research suggesting that human ancestors, particularly males, evolved stronger jaws that were resistant to punches. (Females, perhaps less prone to fighting, do not show this same adaptation). This contradicts earlier hypotheses, which suggested that larger jaws evolved to better consume food resources.
Math for Hungry Birds:	This informational text resource is intended to support reading in the content area. A new study indicates that the flying patterns of hunting albatrosses may resemble mathematical designs called fractals. This article describes the basics of fractals and why scientists think the albatross may hunt in such patterns. As it turns out, many animals may use math to find food!
Meteorites May Have Sparked Life on Earth:	This informational text resource is intended to support reading in the content area. Scientists have formulated and tested another theory to explain how life began on Earth: meteorites crashing into the surface of the ancient planet brought with them the elements of life's building blocks. The results of the scientists' simulations are promising.
Newly Discovered Paddle Prints Show How Ancient Sea Reptiles Swam:	This informational text resource is intended to support reading in the content area. Scientists have found fossils in seabeds in China that are tracks left by nothosaurs, ancient sea reptiles. These tracks provide evidence that these reptiles moved by rowing their forelimbs in unison, answering a long-standing question about how they propelled themselves.
Nobel Goes for Studying "School Buses" in Cells:	This informational text resource is intended to support reading in the content area. The article describes the research of the three scientists sharing the 2013 Nobel Prize in physiology. The scientists studied how cells use vesicles to move materials like "school buses."
Open-Cycle:	This informational text resource is intended to support reading in the content area. This text describes the open cycle method of converting the energy of warmed, surface seawater into electricity and the benefits of using this method.
Parasites: Rulers of the Reef:	This informational text resource is designed to support reading in the content area. The text informs readers about the influence of parasites on damselfish, a coral reef species. The author explains how his team determined the reason for the consistent behavior of damselfish leaving their aggressively guarded territory each morning to go to a cleaning station. Through the scientist describing how his research lead to new observations that lead to new questions and research, the text is a good example of how scientific investigations are conducted, including working collaboratively and communicating important results.

Peering into the Secret World of Life Beneath Winter Snows:	This informational text resource is designed to support reading in the content area. The text describes a new field of researchers called winter ecologists who are examining the effects of warmer winters caused by climate change. The text describes how snow creates an insulating layer for the living organisms below the snow. When that insulating layer is thinner, due to increased global temperatures, the organisms suffer colder temperatures, stress, and even death. Winter ecologists are trying to learn more about this layer, which is called the subnivium, and how organisms are responding to these changes.
Peru Billboard Doubles Up as an Air Purifier:	This informational text resource is intended to support reading in the content area. Students at a university in Peru have erected a billboard near a construction site that filters air. It uses water to rid the air of pollutants like dust, bacteria, and even metal particles. This innovative billboard purifies the same amount of air as 12,000 trees! The billboard uses recycled air and takes little energy to work. The embedded video shows the impact on the construction workers who are near the billboard.
Peru's Melting Glaciers Teach Community "to Be Strong in the Face of the Changes":	This informational text resource is designed to help support reading in the content area. The article discusses the impact of climate change (global warming) on the tropical glaciers in Peru. It focuses on providing a description of how Peruvians depend upon the glaciers and the impact that the melting of the glaciers could have in the future. The author also emphasizes USAID's role in working with Peruvians to help them develop plans to deal with the possible loss of the glaciers
Polar Bears and Climate Change:	This informational text resource is intended to support reading in the content area. Polar bears are highly specialized to living on sea ice in the Arctic including their dependence on two species of seals. Therefore, scientists expect polar bears to be greatly affected by climate changes due to their habitat (reduced sea ice) and prey availability. These effects include increased movement, fewer den areas, and decreased prey access, which are predicted to have a variety of negative consequences on polar bears in the future.
Probing Question: What is a Molecular Clock?:	This informational text resource is intended to support reading in the content area. The article explains what molecular clocks are and how they are used to calculate evolutionary divergence and other evolutionary events.
Rangers Use Artificial Intelligence to Fight Poachers:	This informational text resource is designed to support reading in the content area. The text discusses the design of an artificial intelligence (AI) technology called PAWS that was designed as a tool to help wildlife officials stop poachers. PAWS uses data about previous poaching activities and analyzes the data to create smart and efficient routes for wildlife officers to use while looking for poaching activity.
Revealing the Ocean's Hidden Fertilizer:	This informational text resource is designed to support reading in the content area. The text explains how scientists are working with the National Science Foundation (NSF) to explore the role of phosphorus, and specifically the phosphorus cycle, in marine ecosystems. The author explains what is known about the topic, what research was done, what conclusions were drawn, and the importance of the scientists' findings.
Scientists Discover Fossil of Bizarre Groundhog-Like Mammal on Madagascar:	This informational text resource is designed to support reading in the content area. This article describes a new research discovery of the fossil remains of a groundhog-like mammal found in Madagascar. The article details the methodology scientists employed to unearth the fossil skull and explains the insights it offers into early mammalian evolution in the Southern Hemisphere.
Scientists Discover How Blue and Green Clays Kill Bacteria:	This informational text resource is designed to support reading in the content area. This text describes how researchers unearthed a natural clay deposit with antibacterial characteristics. The text also discusses exactly how the two elements in the clay cause the destruction of the bacteria. The end of the article addresses how this discovery could provide possible solutions to bacteria that are antibiotic-resistant, like MRSA.
Sea Turtles: Ancient Creatures with Modern Problems:	This informational text resource is intended to support reading in the content area. How could an ancient creature have modern problems? The author makes the point that the long history of sea turtle exploitation has led to the current threats sea turtles are facing. The content includes: fossil record evidence, a description of the diversity of species, life cycle and habitats, human contribution to their decline in numbers, global hazards, management and conservation by various researchers and regulatory laws, and suggestions for citizens to help conservation efforts.
Skull Fossil Suggests Simpler Human Lineage:	This informational text resource is intended to support reading in the content area. This article discusses the discovery of "Skull 5" and the traits that have led scientists to the conclusion that early Homo was a more diverse genus than realized before.
Some Ducks Let Young Be Raised by Relatives:	This informational text resource is intended to support reading in the content area. This text is a news article describing three reproductive strategies of goldeneye ducks. The text provides evidence regarding the reasons for such behaviors and also notes how the hypotheses regarding them have changed over time.
Ten things to know about Scott Kelly's #YearInSpace:	This informational text resource is designed to support reading in the content area. The article describes an ongoing NASA research project where astronaut Scott Kelly and cosmonaut Mikhail Kornienko are being tested for the effects of a year-long spaceflight. However, the science of their mission spans three years: one year before they left, one year in space, and another upon their return. In addition, part of the research also includes the Twin Study; Scott's identical twin brother, and a former astronaut, served as a human control on the ground during Scott's year-long stay in space.
The Big Bang: What Really Happened at Our Universe's Birth?:	This informational text resource is intended to support reading in the content area. This article explains the current prevailing theory of the Big Bang by breaking it up into a timeline. At each moment after the Big Bang, the author discusses what happened and what evidence exists for it. The text also explores the mystery of what—if anything—existed before the Big Bang.
The Certainty of Climate Change:	This informational text resource is intended to support reading in the content area. Our Earth's temperatures have increased over time and scientists are attributing this to human activities.
The Dark Side of the Universe:	This informational text resource is intended to support reading in the content area. The article describes how scientists discovered dark energy and dark matter. The article details the role gravity and the study of supernova played in this scientific discovery. It also explains the problems that scientists encountered in the process and the conclusion they were able to reach. The article further explains WIMP, a weakly interacting massive particle and its connection to gamma rays. It also explains how studying supernova helped scientists estimate the age of the universe. Finally, the article summarizes that dark energy still remains a mystery.

The Human Immune System and Infectious Disease:	This informational text resource is intended to support reading in the content area. The text explains the importance and function of the human immune system with a detailed discussion of non-specific versus specific immunity. The text features an embedded animated component showing how vaccines work.
The Importance of Wastewater Treatment :	This informational text resource is intended to support reading in the content area. Wastewater is being dumped into rivers, streams, and oceans, affecting not only the marine environment but also water quality in general. Better treatment processes are needed before this contaminated waste reaches our waterways. The article points out the problems faced by specific countries and their need for better management.
The Infinite Struggle Against Invasive Species in the Galapagos:	The Galapagos Islands provide some of the most unique flora and fauna in the world, and the islands have served as a hot spot for modern evolutionary theory, thanks to the work of Charles Darwin. However, the island's unique biodiversity is threatened by invasive species. This article delves into the struggle we face to preserve the species which are native to the islands.
The Lingering Clouds:	This informational text resource is intended to support reading in the content area. Pollution can cause thunderstorms to leave behind larger, deeper, and longer lasting clouds. This may have important effects on climate change.
The Surprisingly Scientific Flash Behind the Fireworks:	This resource is intended to support reading in the content area. Chemists create pyrotechnics to give viewers the most spectacular fireworks show that they can by using basic chemistry concepts and physics. Readers of this article might be surprised to learn that conserving energy, preventing explosions, and cooling-down reactions are part of this process.
The Unexplained Mystery of Why Hot Water Freezes Faster than Cold:	This informational text resource is intended to support reading in the content area. The article describes the Mpemba Effect - the odd phenomenon that causes hot water to freeze faster than cold water. The author discovers how a high school student brought the Mpemba Effect to the attention of a physicist and explores potential hypotheses for the cause of the phenomenon. The author goes on to discuss some experiments that have sought to explain the Mpemba Effect, but none have done so conclusively.
The Weird, Wild World of Citizen Science is Already Here:	This informational text resource is intended to support reading in the content area. This article describes the collision course between citizens and scientists as "makers" and "hobbyists" begin aiding and supplementing the scientific community more and more. The article gives many examples of amateurs helping out on active projects, especially when science cannot dedicate the hours or money necessary to complete them.
Tiles May Help Shrink Carbon Footprint by Harnessing Pedestrian Power:	This informational text resource is intended to support reading in the content area. The text describes the development of floor tiles that provide a green, alternative energy source. These tiles work on the principle that pressure (footsteps) generates an electric current from certain crystals in an application of the piezoelectric effect.
Too Much Algae – and Too Many Microbes – Threaten Coral Reefs:	This informational text resource is designed to support reading in the content area. The article describes a recent study that helped researchers prove a link between overfishing to increased growth of fleshy algae to microbialization. This increase in microbes causes a depletion of the amount of oxygen dissolved in the water. In addition, the increase in microbial growth can spread disease. In conclusion, microbialization is found to be a major contributing factor to the destruction and decline of coral reef health.
Virus Fingered as Top Suspect in West Coast Sea Star Wasting Disease:	This informational text resource is intended to support reading in the content area. The National Science Foundation article discusses research on the identification and the effects of the Sea Star Associated Densovirus. The article further explains the importance of research on this virus because of its impact on the tidal ecosystems on the Pacific West Coast.
Warming Arctic May Be Causing Jet Stream to Lose Its Way:	This informational text resource is intended to support reading in the content area. The text explains that changing weather patterns can be linked to a weakening of the jet stream. It is known that the jet stream is responsible for changeable weather patterns, and the weakening of the stream is causing weather conditions to stay in locations for longer periods of time. The article concludes that the fuel source of the jet stream (the differences in temperature between the tropics and the arctic) is becoming less dramatic, which in turn is weakening the winds.
Wave Power:	This informational text resource is intended to support reading in the content area. New Jersey-based company Ocean Power Technologies has gained a permit to launch PowerBuoys, which will convert ocean wave energy into power for human consumption. The benefits and concerns of harnessing the ocean's energy by this method are discussed in the article.
What is Chemiluminescence?:	This informational text resource is intended to support reading in the content area. The text defines chemiluminescence as an exothermic chemical process. It contrasts endothermic and exothermic reactions. To better understand chemiluminescence, the author compares the process to incandescence and gives examples of chemiluminescence in everyday life and in nature.
What is the Electromagnetic Spectrum?:	This informational text resource is intended to support reading in the content area. This article describes the entire range of light waves which constitute the electromagnetic spectrum. Excellent graphics aid in illustrating the differences in types of light. The article also uses the electromagnetic spectrum to explore the universe, from visible light to X-rays and gamma rays.
What the New Superbug Means for the US:	This informational text resource is intended to support reading in the content area. The text describes how colistin-resistant bacteria have reached the United States, which is cause for great concern. There are currently some strains of bacteria that are resistant to all types of antibiotics. Scientists will have to develop new antibiotics if we are to continue our mostly successful fight against bacterial disease.
What's Good for Crops Not Always Good for the Environment:	This informational text resource is designed to support reading in the content area. The article describes a recent development that will allow scientists to help farmers determine the precise amount of nitrogen needed for their corn and soybean fields. The research was conducted by two scientists at the University of Illinois. If farmers can pinpoint the exact amount of fertilizer needed, reducing the amount that runs off or leaches into the water supply, the better for all living organisms on Earth.
Where Do Rats Move in After Disasters?:	This informational text resource is designed to support reading in the content area. The article describes how a mathematical model can be used to simulate how environmental changes affect populations of pathogen-carrying rodents. A "capture" program undertaken by researchers at Tulane University allowed them to capture rats in post-Katrina neighborhoods in order to determine how rats migrate after natural or man-made disasters.
Why Did Penguins Stop Flying? The Answer Is Evolutionary:	This informational text is intended to support reading in the content area. This news article describes evidence from a recent study of seabirds that may help explain why penguins lost the ability to fly.

Why Do We Yawn?:	This informational text resource is designed to support reading in the content area. The article seeks to answer the question, "Why do we yawn?" Scientists have yet to reach consensus about the function of yawning. Social and physiological claims about why we yawn are presented from Hippocrates, 17th and 18th century scientists, and scientists today.
Wildlife Species Provide Clues to Spread of Antibiotic Resistance in Africa:	The informational text resource describes how researchers from Virginia Tech and the University of Sydney tested for resistance to 10 antibiotics among 18 wildlife species and cattle in Botswana. The results from the tests showed that antibiotic resistance is being transferred to mostly carnivores at the top of the food web. Animals that show multi-drug resistance are crocodiles, leopards, hyenas, hippos, baboons, and warthogs. There also seems to be a correlation to drug resistance and aquatic life, but only certain species. Further research should be conducted in order to understand how the resistance moves across landscapes.
Will Snakes Inherit the Earth?:	This informational text resource is intended to support reading in the content area. The author discusses the effects that invasive animals can have on an ecosystem. She initially writes about the Burmese python's effect on the Everglades and follows with the effects of other non-native species on native species. Finally, she exposes the reader to the debate about whether something should be done to control invasive species.
World Cup Raises Epidemic Questions:	This informational text resource is intended to support reading in the content area. Tropical areas such as Brazil can be hotspots for communicable diseases due to warm temperatures and crowded urban spaces. There is a concern that when Brazil hosts the World Cup, mosquito-borne dengue fever may spread to its visitors. The article explores methods of pathogen transfer in a variety of venues (pilgrimages, airplanes, cruise lines) and compares these to conditions at the World Cup.
Yellowstone Ecosystem Needs Wolves and Willows, Elk and... Beavers?:	This informational text resource is designed to support reading in the content area. The article discusses the effects of the wolf population in Yellowstone National Park, as well as how other organisms are linked in this food web. As the wolf population decreases, the elk population increases due to lack of predation. The larger elk population decimates the willow population, a prime source of food and building for the beaver. As beaver population decreases, streams no longer deposit enough sediments. This then changes the willow population, because they are no longer able to take root in the stream.

Lesson Plan

Name	Description
A Hole in the Ozone:	In this lesson, students will analyze an informational text intended to support reading in the content area. The article informs readers about the ozone layer and why it was larger and lasted longer in 2015 than in previous years. Although it was unusually large, the practices that have been followed since the Montreal Protocol was enacted have actually resulted in a long-term decrease in the size of the ozone hole. The text explains the aberration and also provides general information about the ozone layer and its function in protecting human life. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
Antibiotic Resistant Wildlife?:	In this lesson, students will analyze an informational text intended to support reading in the content area. The article addresses the possibility that antibiotic resistance is spreading through ecosystems in Botswana because resistance in humans has been shared with many other organisms. Researchers found that antibiotic resistance is significantly higher in water-associated species and carnivores. Scientists believe they can use this information to increase their understanding of why and how species are becoming antibiotic-resistant, with the end goal of stopping the spread of antibiotic resistance in humans. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
Bad News for Starfish:	In this lesson plan, students will analyze an informational text intended to support reading in the content area. The National Science Foundation article discusses research on the effects of the Sea Star Associated Densovirus, a virus devastating sea star populations. The article further explains the implication of the virus for the tidal ecosystems of the Pacific West Coast. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Bees Endangered for First Time:	In this lesson, students will analyze an informational text that addresses a recent listing of yellow-faced bees on the endangered list. This is the first time any type of bee has ever been listed as endangered. The text describes how the yellow-faced bee population in Hawaii has been decimated by invasive species, habitat loss, and climate change. The text also describes an innovative approach by researchers to help bring these bees back from the verge of extinction. This lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Biotechnology at Work: GM Mosquitoes Reduce Dengue Fever:	In this lesson, students will analyze an informational text that addresses the release of genetically modified mosquitoes in Brazil to reduce the transmission of dengue fever. The male mosquitoes were modified so that when they reproduce, their offspring die before they can transmit the disease. The article contains a data table that shows a drastic reduction in the number of dengue cases in places where GM mosquitoes were used in addition to conventional control methods. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Can Snails Cure Diabetes?:	In this lesson, students will analyze an informational text intended to support reading in the content area. The article addresses an innovative possible treatment for diabetes using cone snail venom. The venom contains a form of insulin that is faster acting than human insulin. Further research shows that the cone snail insulin requires no prep before it is used, therefore explaining its quick response time. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
Cells: Taking out the Trash:	In this lesson, students will analyze an informational text that addresses cellular waste. The article students will read explains the different ways a cell gets rid of waste, including how proteasomes and lysosomes break down cell waste. The article covers another method of letting the waste "pile up." This informational text is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

[Everyday Mysteries: Why Do We Yawn?:](#)

In this lesson, students will analyze an informational text that seeks to answer the question "Why do we yawn?" Students will learn that while many claims regarding the social and physiological functions of yawning have been presented from Hippocrates, 17th and 18th century scientists, and experts today, scientists have yet to reach a consensus about the answer to the title question. All the while, this frequent challenge and re-examination of scientific claims helps to strengthen scientific knowledge. This lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric, as well as options to extend the lesson.

[Evolution and Natural Selection at the Top of the World :](#)

In this lesson, students will analyze an informational text addressing two issues, climate change and evolution. This informational text (designed to support reading in the content area) describes how the changing climate in the Arctic is contributing to evolutionary changing in populations of animals that live there. The lesson plan includes text-dependent questions, a writing prompt, answer keys, and a writing rubric along with ideas for extending the lesson.

[Far From Home: NASA's Year in Space Mission:](#)

In this lesson, students will analyze an [informational text](#) that presents information on a year-long space mission aboard the International Space Station. This lesson is designed to support reading in the content area. The text describes the mission of studying the long-term effects of microgravity on human health. Astronaut Scott Kelly and Cosmonaut Mikhail Kornienko were used in the year-long study, along with Kelly's identical twin brother, Mark Kelly, who remained on Earth and was used as a control subject. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Options to extend the lesson are also included.

[Fighting Poaching with Technology:](#)

In this lesson, students will analyze an [informational text](#) from National Geographic that discusses the design of an artificial intelligence technology called PAWS that was designed to prevent poaching. PAWS uses data about previous poaching activities and analyzes the data to create smart and efficient routes for wildlife officers to use while looking for poaching activity. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

[Flexing Their Mussels:](#)

In this lesson, students will analyze an informational text examining scientists' studies of freshwater mussels in an attempt to develop methods for saving threatened species. Students will learn of the researchers' hope to be able to use other species that cohabitate local ecosystems to restore the threatened species. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.

[Forests of the Living Dead:](#)

In this lesson, students will read a [National Science Foundation article](#) that discusses a 200-year study into the mortality of forests. The process of decomposition and the importance of decaying wood in a forest are explained in great detail. The research described has altered and changed the management plans for forest ecosystems worldwide.

This lesson is designed to support reading in the content area. It includes a note-taking guide, a vocabulary guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

[Gr 9-12. Environmental Factors of the Everglades, Lesson 2: Parallels:](#)

Students trace the latitude of the Everglades and different locations around the world, comparing the weather, climate, and other environmental factors of the K-O-E watershed with those of other land masses on or near the 28th parallel.

[Humans vs. the Superbug:](#)

In this lesson, students will analyze an [informational text](#) intended to support reading in the content area. The article addresses how the United States is addressing the discovery of E.coli that is resistant to colistin, an antibiotic used only as a last resort. The text describes steps to take now that this superbug has reached our country. Scientists from the Vanderbilt University School of Medicine explain why it is so easy for bacteria to share their "knowledge" about antibiotic resistance and discuss how concerned the U.S. citizens should be, as well as what we can do to slow the spread of superbugs.

[Investigating Rulers of the Reef: Coral Reef Parasites :](#)

This lesson uses an NSF article to inform the reader about the influence of parasites on damselfish, a coral reef species. The author explains how his team determined the reason for the consistent behavior of damselfish leaving their aggressively guarded territory each morning to go to a cleaning station. He also explains how more questions arose throughout his investigation, questions like "Do these parasites carry other parasites that infect fishes?" and "Do these gnathiid parasites infect other species of fish?" This first-person account creates an interesting view of how marine research is done, including field work, lab work, and collaborating with other scientists. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

[Killer Clay!:](#)

This lesson is designed to support reading in the content area. In this lesson, students will analyze an informational text that addresses innovative research to aid in the understanding of how certain clays can be responsible for the killing of some bacterial pathogens. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

[Link to Evolution:](#)

In this lesson, students will analyze an informational text that presents the major discovery of a nearly-intact cranial fossil of an ancient mammal from the Southern Hemisphere. The article discusses the significance of the discovery of this previously unknown mammal, a mammal scientists have named *Vintana sertichi*. This lesson plan is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

[Many Thrive If the Wolf Survives:](#)

In this lesson, students will analyze an informational text intended to support reading in the content area. The article discusses the interactions of many different species of organisms in Yellowstone National Park. Specifically, the text focuses on the importance of not only the interactions that wolves have with the ecosystem, but how important beavers are to the stability of the whole ecosystem. This lesson includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

In this lesson, students will analyze an informational text that addresses how scientists are mapping the dust of the Milky Way. The text describes how interstellar dust can tell astronomers where stars and planets are forming, where

Mapping the Milky Way's Dust:	a supernova could have occurred and provide other clues to the history of our galaxy and its formation. Using a newly created 3-D mapping tool, astronomers hope to integrate data from this tool with data from other sources in order to learn more about our galaxy than ever before. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Mercury Levels are Rising!:	In this lesson, students will analyze an informational text that addresses a new method for measuring the amount of mercury in the environment that is formed as a byproduct of human activities. The text describes how scientists were able to develop a method for measuring mercury by using data about phosphate and carbon dioxide levels. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Mutualistic Mussels:	In this lesson, students will read an article from the National Science Foundation that discusses how extended droughts have affected salt marsh ecosystems found in the Southeastern part of the United States. The article then describes the mutualistic relationship that was discovered between ribbed mussels and salt marsh grasses and how this relationship is helping the marshes survive and recover from the droughts. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Ocean Camouflage Colors:	Ocean Camouflage Colors explores the concept of light-wave absorption by ocean water and how it alters color perception and consequently the appropriate choice for protective coloration in the ocean. After exploring the students' prior knowledge of concepts like color perception, absorption and reflection, the class watches a video clip of a diver who takes a red apple (and some colorful plastic) diving in the Caribbean. After some further discussion and the creation of a set of notes, students are given a more formal reading activity with 5 questions to complete independently (in most cases). This reading activity can be used in class or possibly as a homework exercise if time is short. Ocean Camouflage Colors was intended as an extension activity to support the 2 mini-labs in Ocean Camouflage. The reading portion can be used alone to bring students who were absent the day of the mini-labs "up to speed" OR it can be used as a review exercise prior to a test OR a homework activity for further practice.
Ocean Motion- A lesson on what causes ocean currents and their effects on life on Earth:	The purpose of this lesson is to allow students to understand what drives ocean currents. Part of this process will include the developing of a testable hypothesis, designing a model, and formulating a conclusion based on observations. Students will further make a connection with how currents have influenced and can influence human behavior, both individually and collectively.
Overfishing Kills Reef Systems!:	In this lesson, students will analyze an informational text that addresses the effects of overfishing on coral reef systems. The text explains how scientists have found that overfishing removes many of the algae-eating fish, and this causes an increase in algae growth, which leads to a microbial increase, and finally leads to coral mortality. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Phosphorus: Fertilizer of the Sea:	In this lesson, students will analyze an informational text intended to support reading in the content area. The text explains how scientists worked with the National Science Foundation (NSF) to try and better understand the phosphorus cycle in marine ecosystems. The author points out that although the phosphorus cycle has been studied in the past, the work chronicled in the article has greatly expanded that understanding. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
Precision Agriculture Eliminates Over-Fertilizing:	In this lesson, students will analyze an informational text intended to support reading in the content area. The article addresses an innovative way to determine the age of the nitrogen in corn and soybean fields. Determining nitrogen's age could help make agriculture more precise, because when farmers over-fertilize their fields, the excess can leak into water supplies. Research scientists from the University of Illinois believe they can use this new technology to identify areas that are specifically deficient in nitrogen and therefore eliminate the need to apply it uniformly. This would benefit agriculture and the environment. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
Rats on the Move:	This lesson plan uses an informational text intended to support reading in the content area. The article describes a research project undertaken by Tulane University students, who collected rodents from neighborhoods affected by Hurricane Katrina. The text describes how a mathematical model can be used to simulate how environmental changes affect the populations of rodents that carry pathogens harmful to human health. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.
Renewable Resources are the answer!:	This lesson deals with understanding how non renewable resources are being depleted. It emphasizes the urgent need to discuss and implement the use of renewable resources since its much cheaper. A total appreciation of what the earth supply us with.
Sustainability and Tourism Location MEA:	This MEA gives the students an opportunity to learn about sustainability and then apply that knowledge to help EcoAthletica determine the location for their next sustainable tourism resort. The students will use a variety of criteria and the definition of sustainability and sustainable tourism to create a model for choosing locations.
The Effect of Seasonal Variation, Due to Climate Change, on Grasslands:	In this lesson, students will examine how ecosystems change due to seasonal variations as they analyze an informational text explaining the process scientists used to collect data on daily changes in grasslands. Students will learn of the usefulness of this data in creating a model that allowed the scientists to predict how seasonal variation will change the grassland ecosystem. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
	In this lesson, students will analyze an informational text that explains how climate change is leading to the melting of

The Impact of Melting Tropical Glaciers:	tropical glaciers in Peru and how this is negatively impacting the residents there. Students will examine how the United States Agency for International Development (USAID) is assisting the Peruvians in developing strategies to deal with the impact. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
The Truth about Blue Eyes:	Students work together to understand an article describing how genes cause eye color (and it probably doesn't match what's in your textbook!)
What Lies Beneath: Coastal Blue Carbon :	In this lesson, students will analyze an informational text that addresses the issue of releasing carbon dioxide into the atmosphere from carbon sink sites located in coastal habitats. This informational text is designed to support reading in the content area. The text describes how carbon that has been stored for potentially thousands of years is getting released into the atmosphere due to coastal habitat destruction of mangrove forests, salt marshes, and sea grass beds. The lesson plan includes text-dependent questions, a writing prompt, answer keys, and a writing rubric.
White Ibis: A Feathered Cujo:	In this lesson, students will analyze an informational text that describes the impact that local ibises have on their environment and the impact that humans have on the birds. The study examines how humans are changing the lifestyles of white ibises, which in turn causes the interactions between birds and humans to lead to a greater spread of disease. The author analyzes the positive and negative effects of interactions between organisms in an ecosystem. The lesson plan includes a text coding strategy, text-dependent questions, a writing prompt, sample answer keys, and a writing rubric. Numerous options to extend the lesson are also included.
Winter Ecologists Explore Effects of Climate Change:	In this lesson, students will analyze an informational text that addresses the consequences of climate change on living organisms in snow ecosystems, particularly those who live in the subnivium beneath the snow's surface. The text describes a new field of researchers called winter ecologists and their findings that show how climate change is causing lighter snows in some areas, diminishing the amount of insulation in the subnivium that many living organisms need to survive the winter. This lesson is designed to support reading in the content area. The lesson plan includes a note-taking guide, text-dependent questions, a writing prompt, answer keys, and a writing rubric.

Original Student Tutorial

Name	Description
Changing with the Times: Variation within Ecosystems:	Explore how environmental changes at different time scales affect living organisms within ecosystems.
Defining Science:	Learn how to define what science is, and identify why certain ways of exploring the universe can and cannot be considered scientific practices.
Drones and Glaciers: Eyes in the Sky (Part 2 of 4):	Learn how to identify the central idea and key details of a text, as well as how to write an effective summary in this interactive tutorial. This tutorial is the second tutorial in a four-part series that examines how scientists are using drones to explore glaciers in Peru. This tutorial is part 1 of a four-part series. Click below to open the other tutorials in this series. <ul style="list-style-type: none"> Drones and Glaciers: Eyes in the Sky (Part 1) Drones and Glaciers: Eyes in the Sky (Part 2) Expository Writing: Eyes in the Sky (Part 3) Expository Writing: Eyes in the Sky (Part 4)
Evolution: Examining the Evidence:	Learn how to identify explicit evidence and understand implicit meaning in a text. You should be able to explain how different types of scientific evidence support the theory of evolution, including direct observation, fossils, DNA, biogeography, and comparative anatomy and embryology.

Professional Development

Name	Description
Cultivating Literacy: Reading Skills and Standards:	<p>Click "View Site" to open a full-screen version.</p> <p>By the end of this module, teachers should be able to:</p> <ul style="list-style-type: none"> Name the key instructional shifts in English Language Arts and Literacy Label the College and Career Readiness, also known as CCR, anchor standards for Reading Use the language of the Reading Standards for Literacy in Science and Technical Subjects to identify what students should know and be able to do Arrange and sequence the Reading Standards for Literacy in Science and Technical Subjects Distinguish the changes in rigor as a Reading standard progresses from one grade band to the next <p>This is Module 1 of 4 in the series, "Literacy across the Content Areas: Reading and Writing to Build Content Knowledge."</p>

Tutorial

Name	Description
Sparks Fly: Discovering Central Ideas:	<p>Click "View Site" to open a full-screen version. This tutorial is designed to help secondary science teachers learn how to integrate literacy skills within their science curriculum. The focus on literacy across content areas is designed to help students independently build knowledge in different disciplines through reading and writing. This tutorial will demonstrate a series of steps that teachers can use with students to help them determine the central ideas of a science text. It will also demonstrate how students can trace a text's explanation or depiction of a complex</p>

Student Resources

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Evolution: Examining the Evidence:	Learn how to identify explicit evidence and understand implicit meaning in a text. You should be able to explain how different types of scientific evidence support the theory of evolution, including direct observation, fossils, DNA, biogeography, and comparative anatomy and embryology.