Penn State University Career Pathways
Lesson Plan

Class Title	CP - Bellefonte
Instructor	Lori Forlizzi
Week	4/5/16
Lesson Topic	Finding main/central ideas in a text
Objective(s)	Students will be able to independently identify main ideas in informational text
Assessing Mastery of the Objective	Students will be able to independently identify 3 out of 5 main ideas in a target informational text
Length of Lesson	3 hours across 2-3 days

Foundation Skills Information

Basic Workplace Skills	Basic Employability	Basic Workplace Knowledge
___ Uses Technology	____ Demonstrates Interpersonal relations	____ Applies Health and Safety concepts
___ Observes Critically	____ Demonstrates Self-Management Strategies	____ Understands Process and Product or Service
___ Listens with Understanding	____ Works in Teams	____ Demonstrates Quality Consciousness
___ Speaks Clearly and Concisely	____ Solves Problems	____ Understands Finances
___ Writes Clearly and Concisely	____ Makes Decisions	____ Works within Organizational Structure and Culture
__x_ Reads with Understanding		
___ Applies Mathematical Concepts and Operations		
___ Locates and Uses Resources		

	Math	Reading	Writing	Language
CCRS Anchor/ Standard/ Math Shifts		2D: Determine a theme or central idea of a text and how it is conveyed through particular details		

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Depth of Knowledge	_____ DOK 1 Recall/Recognition: ____x__ DOK 2 Using a Skill or Concept: _____ DOK 3 Strategic Thinking: _____ DOK 4 Extended Thinking:
Math Instructional Practices	____ MP.1: Make Sense of Problems and Persevere in Solving them: ____ MP2: Reason Abstractly and Quantitatively: ____ MP.3: Construct Viable Arguments and Critique the Reasoning of Others: ____ MP.4: Model with Mathematics: ____ MP.5: Use Appropriate Tools Strategically: ____ MP.6: Attend to Precision: ____ MP.7: Look for and Make Use of Structure: ____ MP.8: Look for and Express Regularity in Repeated Reasoning:
ELA Instructional Shifts	___x___Dimension 1.1 Text Complexity: ____x__Dimension 1.2 Academic Vocabulary: _____Dimension 2.1 Comprehension/Evidence _____Dimension 2.2 Argument/Inform. Wtg.: _____Dimension 3.1 Content Rich Text: _____Dimension 3.2 Bldg. Knowledge About a Topic/Research:

Materials	Two Newsela pro/con articles: "Self-driving cars are just around the corner. Is it a good thing?" (GL 6) 3.11.16 "The world's getting warmer, can nuclear power help us?" (GLs 3 and 6) 2.5.16 (articles will be accessed by students via laptop or print copies) Vocabulary knowledge rating scale with 8 target vocabulary words for the self-driving car article: Capable Staggering Utility Destination Glitches Subjected to Et. cetera Pre-empts Vocabulary quiz for self-driving car article Text-based questions for self-driving car article Laptops, paper, pens/pencils, highlighters
Anticipatory Set/Requisite Pre-skills	Students should be able to read with sufficient fluency and accuracy that they can restate orally what the text is generally about. Note: ELs and lower-level students will have read a lower-level version of "Self-driving cars are just around the corner. Is this a good thing?" prior to this lesson.
Instructional Procedure	**Introduction to lesson:** Note that being able to find main ideas of a reading is a central college and career ready skill. Understanding the key ideas of a reading (that is, text) is important in order to use the information in the material. We are all well-aware of the

	requirement to read and use the information from readings in academic contexts. However, also note that we are constantly asked to use information from reading in our personal and work lives as well. For example, we may need to read and act upon an important notice from a bank, from a child's teacher, or an important legal document. In the workplace, we may be asked to research a problem, glean information from a variety of sources, and propose a solution to the problem. In order to do these tasks, we must first understand what the text actually says – that is, grasp the main ideas and key supporting details. We will be working together to develop skill in finding main ideas as a prerequisite to other important skills with text information. **Body of the Lesson:** **Introduction of skill/modeling:** Note that the main ideas in a reading are the author's most important ideas, that is, key or take-away ideas. Other ideas in the text should support the main ideas. Usually we can identify a few key, or main, ideas that will be supported by other ideas in the reading. It is important to note that key ideas may not be directly stated. Sometimes we may need to put together key details and infer, or come up with, our own statement of the main ideas. Note that we will now apply this information together in the article titled "Self-driving cars are just around the corner. Is this a good thing?" Instructor introduces and discusses target vocabulary words. Students read "pro" text (GL 6) independently (online reading will be encouraged). Teacher will assist low-level and EL students as needed. Discussion of any additional words students have questions about. Students and instructor discuss text-based questions on "pro" article (promotes rereading and discussion of the article). Instructor uses read-aloud/think aloud to demonstrate how she would delineate the major ideas of the "pro" article. The guiding question she introduces and thinks through is: which ideas must be included to capture all of the important points in the selection?
Guided Practice/ Assessment	**Guided practice:** Note that students will now have another opportunity to work together and independently to practice this skill. Students read "con" portion of the article (GL 3 or 6; online reading will be encouraged). Teacher will assist low-level and EL learners. Discussion of any additional words students have questions about. Students and instructor discuss text-based questions for "con" article (promotes rereading and discussion of the article). Activity: Main Idea Work Groups (students work in pairs or small groups to identify main ideas of the selection). Activity directions: students work independently to make notes on the main ideas they see in the selection. Then, they pair up or join a small group to discuss and debate the main ideas they have identified. They must answer the guiding question: Which ideas must be included to capture all of the important points in the selection?" Finally, small groups or pairs share their main ideas. Full group discussion occurs to reach a consensus. **This marks the end of of Day 1.** **Day 2 Independent practice:** Students independently read (laptop or print version) and determine main ideas of "The world's getting warmer, can nuclear power help us?" "pro" selection (GL 3 or 6). Teacher collects and reviews student work.

	Day 2 or 3 Assessment: Students independently read (laptop or print version of) and determine main ideas of "The world's getting warmer, can nuclear power help us?" "con" selection (GL 3 or 6). The criterion for success will be identifying 3 out of 5 key ideas in this text. Students complete vocabulary quiz for self-driving car article. Teacher collects and reviews student work.
Closure	**Close (end of Day 1):** Today we have worked with the skill of finding the key, or main, ideas in a text. Since being able to find main ideas of a reading is a central college- and career-ready skill, we will continue to return to discussion of this strategy over the next few weeks and will continue to apply it in the readings we do in class. We will next apply this strategy in working toward another important college and career ready skill, finding the theme. More on this will come another day. The teacher will lead a discussion of how this strategy might be applied in other settings. What seemed to work? Where do students feel they may need additional assistance and/or practice?
Technology Connection	Check all that apply: __x_ Laptop _____ IPad ___ Calculator ___ PowerPoint _____ TV/VCR/DVD _____ Chromebook _____ SmartBoard _____ Mobile Other: _____

Evaluation/ Notes:	
Reflection:	

PRO/CON: Self-driving cars are just around the corner. Is it a good thing?

By Tribune News Service, adapted by Newsela staff on 03.11.16
Word Count **1,522**

Jessie Lorenz of the Independent Living Resource Center in San Francisco, California, who is blind, touches the two-seater prototype of Google's self-driving car at Google headquarters in Mountain View, California, May 13, 2015. Photo: LiPo Ching/Bay Area News Group/TNS

PRO: Sit back and enjoy the self-driving ride

Are Americans ready for cars that can drive themselves? Yes, and they have been for more than a century.

The horses that pulled buggies did not need anyone to drive them. They were capable of finding their way home with little or no help from humans. Traveling without a driver is not a new idea — it's just a better way to travel.

At the beginning of the 20th century the number of vehicles increased. The rate of deaths and injuries caused by vehicular accidents likewise jumped. Modern technology and safer car design have helped decrease the number of fatal crashes, but the numbers still remain staggering.

Making The Streets Safer

In the U.S. alone, vehicular accidents have killed more than 32,000 people each year for the past five years in which accidents were tracked. That's as if five 737 jets crashed every week. It is more than double the number of people who died worldwide during the recent Ebola outbreak.

Between 93 percent and 95 percent of these fatal accidents are caused by human error. That figure comes from the National Highway Traffic Safety Administration, the government agency that works to make America's roads safe.

In addition to deaths, vehicle accidents send about 2.5 million injured people per year to emergency rooms. We accept these accidents because cars are incredibly useful and give us the freedom to go where we want, when we want. Self-driving vehicles deliver even greater utility by freeing driving time for other things. Instead of driving, people could be texting, working or just relaxing.

The self-driving cars that are now being developed use many forms of technology to drive themselves. Radar, cameras and other devices are used to "see" the world around the car. Advanced computer systems drive the car from one destination to another without any help from humans. These cars should soon be ready for mass production.

Self-driving cars remove many of the human mistakes that cause injuries and deaths. Self-driving cars can also help disabled and elderly people get from place to place on their own.

On The Road Toward Self-Driving

That is not all. Young people seem to love driving less than they did in the past. They drive fewer miles and some do not even get their driver's license. Rather than driving to see friends, they may simply text or call them. For many young people, owning a smartphone is now more important than owning a car.

Buying a car is also a major expense, as is paying for the gas that fuels it. Then there is the insurance people have to buy to protect them in case they get into an accident. A good insurance plan might pay for all the damage caused by an accident, but it could also cost hundreds of dollars each month. That cost would be lower with self-driving cars.

In some ways self-driving cars are already here. Some of the most recent safety improvements in cars come very close to self-driving. New technology can control a car's speed, keep it in its lane and help with parking. These put us on a clear path toward self-driving cars.

Of course, self-driving cars will not create a perfect world. There will still be some accidents, although far fewer. There will be some people who will never give up driving their cars and others who live in areas difficult to serve with self-driving cars.

Some lawmakers may try to prevent self-driving cars from using our roads. They might do this fearing the criticism that will come after the first accident caused by a self-driving car. Other people will see self-driving cars as a threat to their business and try to stop them from becoming popular.

Self-driving cars offer such a wealth of advantages that it makes little difference whether Americans are ready. Americans need to get ready. Self-driving cars will soon be in their rear-view mirrors.

ABOUT THE WRITER: Robert W. Peterson is a professor of insurance law at Santa Clara University School of Law, where he also writes and teaches on issues involving self-driving cars. Readers may write him at Santa Clara University of Law, Santa Clara, CA 95053.

This essay is available to Tribune News Service subscribers. Tribune did not subsidize the writing of this column; the opinions are those of the writer and do not necessarily represent the views of Tribune or Newsela.

CON: You can't take humans out of the self-driving equation

No one likes backseat drivers. They question every decision a driver makes and sometimes they can be nagging. They constantly attempt to correct what they consider to be the driver's errors of judgment.

Can you imagine a backseat computer doing the same thing? One you can't kick to the curb?

The computer in question would actually be under the dashboard. It will soon be taking over the driving for you.

It's the self-driving car, and it's no longer science fiction. It's already here. Bits and pieces of it, anyhow. Many new cars use cameras and sensors to park themselves, for instance. Others have accident avoidance systems that can completely stop the car without the driver even touching the brakes.

Introducing The V2V Cadillac

Next year, General Motors will debut vehicle-to-vehicle, or V2V, communications in some of its Cadillac models.

The system makes it possible for cars with V2V technology to have electronic conversations among themselves. They will be aware of one another's position and speed in order to predict and avoid accidents. This could prevent situations where, for instance, car A runs a red light because its driver wasn't paying attention and strikes car B.

With V2V, the driver of car A would be safety-netted by the car. Car A would automatically brake for the light and avoid hitting car B.

These are some of the elements of the fully self-driving car. And some of it sounds good — and may well be. But taking the driver out of the equation entirely — or relying too much on technology — can have its downside, too.

As anyone who owns a computer knows, computers develop glitches. It's annoying when it happens at your desk. But it could be deadly when it happens at 75 miles per hour on the freeway.

And it's probably more likely to happen with a self-driving car. The computer that controls the car — unlike the computer on your desk — will be subjected to extremes of heat and cold, vibration and moisture, et cetera.

Over time, something's likely to go wrong. If the human driver has become only a passenger — no longer expected or perhaps even able to actually drive the car — what will happen?

If The Driver's No Longer The Driver ...

And who will be responsible? Legally speaking, the driver is currently responsible for the safe operation of the vehicle.

But how can we hold the driver responsible when he or she is no longer the driver?

Will the manufacturer of the self-driving car be to blame in that case?

How will car insurance rules and costs change?

If the driver no longer is a driver, why should he or she be required to buy insurance at all? If the person is not actually driving the car, he or she will not need protection from the damages caused by any accidents. Will he or she even need a driver's license? When you ride the bus you are not required to have a special license — or carry insurance. Why wouldn't the same principle apply here?

An even bigger problem with self-driving cars is how to program them to ignore traffic laws when it's necessary in order to avoid an accident. For example, cars cannot cross the double yellow line. What happens if a child runs into the car's path and the only way to avoid hitting the child is to turn out of the way?

It's against the law, technically, to cross the double yellow line — but it's the right thing to do in this instance. And a human driver would do it, but a self-driving car might not because it is programmed to obey the traffic laws. Unlike humans, the self-driving car cannot use its judgment to ignore a law to save a life.

Also, how will self-driving cars deal with human-driven cars, and what about the reverse? Will people who own human-controlled cars be required to turn their cars in or no longer be allowed to drive them?

Technology is usually a good thing, but problems arise when technology is no longer under human control, as could happen here.

Technology that assists human drivers — that's a great idea. But technology that pre-empts them — that could be a very bad idea, indeed.

Quiz

1   Which sentence from the CON article BEST supports the idea that self-driving cars could malfunction?

   (A)   But taking the driver out of the equation entirely — or relying too much on technology — can have its downside, too.

   (B)   The computer that controls the car — unlike the computer on your desk — will be subjected to extremes of heat and cold, vibration and moisture, et cetera.

   (C)   If the person is not actually driving the car, he or she will not need protection from the damages caused by any accidents.

   (D)   Also, how will self-driving cars deal with human-driven cars, and what about the reverse?

2   What could be another title for the section "Making The Streets Safer" in the PRO article?

   (A)   "No More Mistakes"

   (B)   "Self-Driving Equals Freedom"

   (C)   "Using Technology To Our Advantage"

   (D)   "Safety Technology Already In Use In Many Cars"

3   Which paragraph in the section "Making The Streets Safer" BEST supports the following claim from the PRO article?

   There will still be some accidents, although far fewer.

4   Which of the following statements represents a claim made by both the PRO and CON authors?

   (A)   There will be accidents with self-driving cars.

   (B)   Some lawmakers are skeptical of self-driving cars.

   (C)   Most people prefer self-driving cars to traditional cars.

   (D)   There will be complex insurance issues with self-driving cars.

Answer Key

1   Which sentence from the CON article BEST supports the idea that self-driving cars could malfunction?

        (A)   But taking the driver out of the equation entirely — or relying too much on technology — can have its downside, too.

        (B)   The computer that controls the car — unlike the computer on your desk — will be subjected to extremes of heat and cold, vibration and moisture, et cetera.

        (C)   If the person is not actually driving the car, he or she will not need protection from the damages caused by any accidents.

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        (C)   "Using Technology To Our Advantage"

        (D)   "Safety Technology Already In Use In Many Cars"

3   Which paragraph in the section "Making The Streets Safer" BEST supports the following claim from the PRO article?

       There will still be some accidents, although far fewer.

        Paragraph 4:
        Between 93 percent and 95 percent of these fatal accidents are caused by human error. That figure comes from the National Highway Traffic Safety Administration, the government agency that works to make America's roads safe.

4   Which of the following statements represents a claim made by both the PRO and CON authors?

        (A)   There will be accidents with self-driving cars.

        (B)   Some lawmakers are skeptical of self-driving cars.

        (C)   Most people prefer self-driving cars to traditional cars.

        (D)   There will be complex insurance issues with self-driving cars.

PRO/CON: Should we use nuclear power to stop climate change?

Dry cask storage units of nuclear fuel are pictured at the Vermont Yankee nuclear plant in Vernon, Vermont, June 9, 2009. Photo: AP/Toby Talbot

PRO: Nuclear power is the best way to go

Electricity is very important. We use it for many things. We use it to light our homes. We use it to run our computers.

Many kinds of power are used to make electricity. The best is nuclear power.

Nuclear power comes from splitting the nucleus of an atom. Tiny atoms are everywhere. Everything is built out of them. The nucleus is the center part of an atom.

Heat is released when a nucleus is split. The heat can be turned into a kind of power. Nuclear power is made in buildings called nuclear power plants.

No Carbon

Nuclear power is the best way to make electricity. It does not give off carbon.

Carbon is in the gases that are given off when fuels are burned. Fuel is one kind of power. Coal, gas or oil are all fuels. People burn fuels to run cars and machines.

When carbon gases are given off they remain in the air. They trap heat. Scientists call this the greenhouse effect.

Over time, the greenhouse effect has made the world hotter. Scientists call this climate change or global warming.

Global warming is causing all kinds of serious problems. In some places, lakes and rivers are drying up. There is no longer enough water.

In other places, ice is melting. So much ice is melting that the ocean is rising. Some small island countries are sinking under water.

The world is starting to come together to fight climate change. Nuclear power can help. The more we use it, the less carbon will be given off into the air.

The Sun And The Wind

Wind power and solar power do not give off carbon either. They do not work all the time, though. The sun has to be out for solar power to work. The wind has to be blowing for wind power to work.

Nuclear power plants run 24 hours a day. They run seven days a week.

Many people are worried that nuclear power will hurt them. They worry about radiation leaking from nuclear power plants. Radiation can be deadly. Even a small bit of it can kill.

Nuclear plants are built to keep radiation from leaking out. Still, many people worry something will happen anyway.

They have no reason to worry. Nuclear power plants are very safe. No one in the United States has ever been killed or hurt by a radiation leak.

World leaders gathered in Paris, France, last month. They came to talk about ways to stop global warming. They agreed that every country will have to cut back on greenhouse gases. The plan is to get rid of greenhouse gases by 2050.

Doing that will be very hard. Right now, there are around 7 billion people in the world. By 2040, there will be 9 billion people. The world will need much more electricity.

The only answer is to use nuclear power much more than we do now. Nuclear power can give people all the electricity they need. It can also help stop global warming. There is no other way to do both things at the same time.

CON: Renewable energy is cheaper and safer

The world needs to cut back on greenhouse gases. There is no other way to stop global warming. Something must be done soon. We are all in danger.

Nuclear power is part of the answer. Renewable energy is an even better idea, though. Wind power and solar power are two kinds of renewable energy.

These renewables are both cheaper and safer. We should try to use them much more than we do now.

Many countries are using less nuclear power these days. At the same time, they are using wind and solar power more. There are good reasons for this.

One is cost. Nuclear plants cost billions of dollars to build. Renewables are much cheaper.

A Bad Nuclear Accident

Nuclear plants also may not be as safe as they seem. There is always the chance that something will go wrong.

In 2011, something terrible did happen in Fukushima, Japan. A huge earthquake shook the ground and knocked down buildings. A nuclear plant was hit and radiation began leaking out. The land nearby was poisoned. People had to leave their homes.

Something like that could happen here.

Instead of more nuclear power, the United States should use more renewables. We also should try not to waste power. Using power in a way that is not wasteful is known as energy efficiency.

There are many ways to be more energy efficient. For example, we can switch to new kinds of lights that use less electricity.

For years, the U.S. government has favored nuclear power and fuels. Now, finally, people are thinking about renewables and energy efficiency. We should keep moving in that direction. We should do it fast, too.

ABOUT THE WRITER: Michael Kraft is professor of political science and public and environmental affairs at the University of Wisconsin-Green Bay.

Quiz

1   Read the PRO article's introduction [paragraphs 1-4]. Which paragraph tells how nuclear power is used?

2   Why did the CON author include this paragraph in the section "A Bad Nuclear Accident"?

In 2011, something terrible did happen in Fukushima, Japan. A huge earthquake shook the ground and knocked down buildings. A nuclear plant was hit and radiation began leaking out. The land nearby was poisoned. People had to leave their homes.

(A)   to tell a personal story about nuclear power

(B)   to show the dangers of nuclear power

(C)   to explain how nuclear power works

(D)   to show that earthquakes cause more problems than nuclear power

3   Which sentence from the PRO article tells the author's point of view?

(A)   Heat is released when a nucleus is split.

(B)   Nuclear power is the best way to make electricity.

(C)   The world is starting to come together to fight climate change.

(D)   Many people are worried that nuclear power will hurt them.

4   What is the point of view of the CON author?

(A)   No one should ever use nuclear power.

(B)   Nuclear energy is safer than renewable energy.

(C)   People should use more wind and solar energy.

(D)   Renewable energy is more expensive than nuclear energy.

Answer Key

1   Read the PRO article's introduction [paragraphs 1-4]. Which paragraph tells how nuclear power is used?

Paragraph 1:
Many kinds of power are used to make electricity. The best is nuclear power.

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PRO/CON: The world's getting warmer, can nuclear power help us?

By Tribune News Service, adapted by Newsela staff on 02.05.16
Word Count **1,520**

Dry cask storage units of nuclear fuel are pictured at the Vermont Yankee nuclear plant in Vernon, Vermont, June 9, 2009.
Photo: AP/Toby Talbot

PRO: Using more nuclear energy will stop greenhouse gases

Nuclear power plants produce energy by splitting apart the nucleus, or center, of atoms. When the nucleus is split, heat is released. That newly released energy is then used to produce electricity. In turn, that electricity is sent through a grid to light our homes and power our computers.

Nuclear power is only one of many ways of producing electricity. However, it is superior to any other method for one important reason. It is the best way to produce carbon-free electric power.

Carbon is in carbon dioxide and other gases. It is released or emitted when fuels like coal, gas or oil are burned. People burn these fuels to power cars and all sorts of machinery.

Carbon-containing gases are the main cause of the so-called greenhouse effect. Once they are released through the burning of fuels, they remain in the atmosphere and trap heat, just as heat is trapped in a greenhouse. Over time, this has caused average global temperatures to rise.

A Valuable Tool

The global increase in average temperature is known as climate change or global warming. It is putting the planet at risk. Polar ice caps are starting to melt, thereby causing ocean levels to rise. Increasingly, coastlines and island nations are being submerged. In other parts of the world, droughts are becoming common as lakes and rivers dry up.

The world is starting to come together to try to limit climate change. Clearly, a carbon-free source of energy like nuclear power is a valuable tool in that effort.

Nuclear power now accounts for more than 60 percent of the United States' zero-carbon electricity. It is playing an essential part in the battle to reduce greenhouse gas emissions.

Wind power and solar power can also produce energy without releasing carbon. However, they are not constant. To work, the sun has to be out, or the wind has to be blowing.

Nuclear power plants run 24 hours a day, seven days a week. They are the only constant source of power that does not emit greenhouse gases.

An Excellent Safety Record

Many claim nuclear power is dangerous. Nuclear power plants produce radiation, which can be a dangerous form of energy. Even a small amount can cause severe damage to living things. Nuclear plants are built to keep radiation from leaking out, but many people worry such leaking will happen anyway.

Actually, there is no reason for concern. The nuclear power industry has an excellent safety record.

The first commercial nuclear reactor began producing electricity more than 50 years ago. In all that time, there has not been a single death or injury from a radiation-related nuclear power plant accident in the United States.

Many other countries also successfully rely on nuclear power. In France, nuclear power supplies 75 percent of the electricity, with enough to spare to provide almost a quarter of the electricity in Europe.

The picture is very different in China, the world's biggest carbon polluter. There, nuclear energy provides only 2 percent of the power. Coal remains China's main energy source, and its use is increasing not only in China but throughout Asia.

Last month, representatives of most of the world's nations met in Paris, France, to discuss the climate crisis. The agreement they signed was far-reaching. It set a goal of bringing carbon emissions down to zero by the second half of this century.

Meeting that goal might seem impossible. However, France and Sweden show that countries can change their energy use very quickly. Both have been able to greatly increase their use of carbon-fee nuclear power in a relatively short time.

Reducing The Need For Oil

If the world built nuclear reactors at the same rate as France and Sweden have, the effect would be enormous. In 25 to 34 years, all the electricity now produced though burning coal and natural gas could be produced by nuclear power.

During this period, electric vehicles powered by nuclear-generated electricity could dramatically reduce the need for oil. These changes would greatly lower global carbon emissions and would help prevent dangerous climate change.

Meeting the new climate control goals is a daunting challenge. The world's population is expected to increase to more than 9 billion by 2040. As a result, global demand for electricity will nearly double.

Unless the use of nuclear power is greatly increased, it will be impossible to both meet future energy demand and prevent dangerous climate change. Nuclear power is the only way to achieve both those goals at the same time.

CON: Nuclear power is only part of the answer, we need more solar and wind energy

The 2015 Paris climate agreement sets a remarkable goal. It calls on all countries to greatly reduce their greenhouse gas emissions.

Most of these emissions come from the burning of fossil fuels like coal, oil and natural gas. The message could not be clearer: We need to change the way we generate and use energy, and do so quickly.

The United States set itself a modest goal. It has pledged to cut emissions by around a quarter by 2025. The country has already taken some steps to meet that goal, but much more is needed.

Perhaps the most realistic approach is to increase the use of both nuclear power and renewable energy. Renewable energy sources, also called renewables, include such things as wind power and solar power.

A Better Bet

China has been using this approach. It plans to double its nuclear power capacity, and has 24 new plants now under construction. However, it is also expanding its use of wind and solar power.

Should the United States do the same? Yes, but only in part. Currently, our 99 nuclear reactors only account for about 8 percent of the electricity the U.S. consumes. Most of the energy we use, about 81 percent, comes from fossil fuels.

Nuclear power will have an important part to play, but it is unlikely to replace much fossil fuel use. It is still too expensive and too risky.

A better bet is to expand the use of renewables, while also working to make our energy use less wasteful.

Globally, nuclear electricity production has been leveling off while wind and solar power are soaring. There are good reasons for this.

One is cost. The new nuclear plants now being built in the U.S. are expected to cost $8 billion to $9 billion each, possibly more. It is also very expensive to safely shut down plants, which eventually becomes necessary when they are too old.

These very high costs make it difficult for the private utilities that provide our electricity to increase nuclear power generation. They see more promise and lower costs in natural gas-powered plants or in turning to renewables.

Nuclear Waste, And A Disaster

The problem of radioactive waste is another big reason to avoid an increase in nuclear power. There is currently no acceptable way to dispose of the highly radioactive waste nuclear plants create.

There is also always the chance of the kind of disaster that occurred in Fukushima, Japan. In 2011, an earthquake there caused radiation-contaminated water to leak out of a nuclear plant, poisoning the surrounding area. The U.S. public remains understandably concerned that such a disaster could happen here.

A better way is for the country to greatly increase its use of renewables. At the same time, we should try to use energy in a way that is less wasteful. A non-wasteful use of energy is known as energy efficiency.

There are many ways to cut down on wasteful energy loss. Among them are improved building design, and a greater use of trains and buses in place of cars. We should modernize our electrical grid, and design better lighting, heating and cooling systems.

The United States also should put more money into research on promising new types of energy.

The federal government has long favored nuclear power and fossil fuels. For the past 10 years, renewables and energy efficiency have begun to receive significant support. We should keep moving in that direction, and quickly.

Quiz

1   Read the following paragraphs from the CON author.

> *Globally, nuclear electricity production has been leveling off while wind and solar power are soaring. There are good reasons for this.*
>
> *One is cost. The new nuclear plants now being built in the U.S. are expected to cost $8 billion to $9 billion each, possibly more. It is also very expensive to safely shut down plants, which eventually becomes necessary when they are too old.*

How do the paragraphs develop the idea that nuclear plants are not worth the cost?

(A)   by providing an expert opinion about the cost of nuclear plants

(B)   by citing a fact about the cost of building nuclear plants

(C)   by describing a personal experience with nuclear plants

(D)   by comparing the cost of using fossil fuels versus nuclear plants

2   Read these two paragraphs from the PRO article.

> *Wind power and solar power can also produce energy without releasing carbon. However, they are not constant. To work, the sun has to be out, or the wind has to be blowing.*
>
> *Nuclear power plants run 24 hours a day, seven days a week. They are the only constant source of power that does not emit greenhouse gases.*

How do these paragraphs use a comparison to support a claim?

(A)   They compare the dependability of different sources of power.

(B)   They compare the safety of different sources of power.

(C)   They compare the price of different sources of power.

(D)   They compare the technology used in different sources of power.

3   Which question BEST captures the main point of disagreement between the PRO and CON authors?

(A)   What is the main cause of global warming?

(B)   Is nuclear power too dangerous to ever use?

(C)   Should people try to conserve more energy?

(D)   Which type of energy will most help reduce global warming?

4   Which are the two MAIN criticisms of nuclear power from the CON author?

1. *It is too expensive.*
2. *It creates too much pollution.*
3. *It presents major risks.*
4. *It does not produce energy in a reliable way.*

(A)   1 and 2

(B)   2 and 3

(C)   1 and 3

(D)   2 and 4

Answer Key

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