Christina School District Instructional Board

Student's First & Last Name_____ Student ID/Lunch # _____ School _____ Grade_____

Grade Level: 11th

Week of June 1st, 2020

	Day 1	CSD PD	Day 2	Day 3	Day 4
ELA	This week you will read blogs in order to become a blog writer ----------What do you already know about blogs? Have you ever read a blog? Think of a blog you've read and explain what it was about. Why did you choose to read it? Read **"What is A Blog Anyway?"** As you read, annotate important details. Summarize your understanding in 12 words exactly.		Read the blog sample 1. **How to Make an Omelet** As you read and make notes. Underline things you find interesting. Complete the graphic organizer for the blog	Read the blog sample 2. **"Corona Impacting HS Seniors … "**As you read, make notes. Underline things you find interesting. How is this blog different/ similar to blog 1? Complete the graphic organizer for the blog	Read the blog sample 3. **"Interesting DIY Tech Accessories, Gadgets, and Gifts".** As you read, make notes. Underline things you find interesting. How is this blog different/ similar to blogs 1 and 2. Complete the graphic organizer for the blog. **Challenge:** Create your own blog
Math (IM3)	*Reasoned Arguments* Answer "Which One Doesn't Belong?" and justify your choice. (attached) Review Concept Summary: Indirect Proof (attached) Complete Reasoned		Complete Reasoned Arguments Worksheet 2 #1-7. (attached) Reference Concept Summary if needed.	Complete Reasoned Arguments Worksheet 3 #1-5. (attached) Reference Concept Summary if needed.	Complete proof on Reasoned Arguments Worksheet 4. . (attached) Reference Concept Summary if needed.

Christina School District Instructional Board

Student's First & Last Name_____ Student ID/Lunch # _____ School _____ Grade_____

	ArgumentsWorksheet 1 #1-3. (attached)				
Science	**When It Comes to Putting the Squeeze on Hydrogen, Diamonds Make the Point (part 1):** Read article. Highlight, underline and/or annotate for understanding.		**When It Comes to Putting the Squeeze on Hydrogen, Diamonds Make the Point (part 2):** Reread article and/or notations as necessary. Write a claim that answers the following: How would the mass production of solid hydrogen further medical technology? Support your claim with relevant data or evidence from the article. Then, justify why the data or evidence supports the claim.	**Matter and Energy: What Are Atoms? (part 1):** Read article. Highlight, underline and/or annotate for understanding.	**Matter and Energy: What Are Atoms? (part 2):** Reread article and/or notations as necessary. Write your best answer to the following: Explain the relationship between protons, electrons, and neutrons. In your response include: 1) How the atomic number of an element becomes its identification. 2) The difference between ordinary forms of atoms and isotopes. 3) How a neutral atom becomes an ion.
Social Studies	Complete Activity 1 from the document titled, "Responsible for the Cold War"		Complete Activity 2 from the document titled, "Responsible for the Cold War"	Complete Activity 3 from the document titled, "Responsible for the Cold War"	Complete Activity 4 from the document titled, "Responsible for the Cold War"

Name _____ ID#/Lunch# _____ School _____ Grade _____

What Is A Blog Anyway?

You've seen the word, you've seen the websites and you may even have one. But have you ever wondered: What's the big deal about blogs?

To make sense of blogs, you have to think about the news and who makes it. We'll look at news in the 20th vs. the 21st century to make our point. In the 20th century, the news was produced professionally. When news happened, reporters wrote the stories and a tiny group of people decided what appeared in a newspaper or broadcast. Professional news was mainstream: general and limited.

The 21st century marked the point where news became both professional and personal. A new kind of web site called a weblog or blog came onto the scene that let anyone be a reporter and publisher - often for free. As blogs became popular, they created millions of news sources and gave everyone an audience for their own version of news. Of course, we're using the word "news" loosely. But really - isn't everything news to someone?

With a blog...A business owner can share news about his business. A mother can share news about her family. A sport's star can share news with fans. These people are all "bloggers".

How did this happen? Well, blogs made sharing news on the web easy. Anyone with an idea can start a new blog with the click of a button and share news minutes later. Here's how blogs work.

Blogs are websites that are organized by blog posts - these are individual news stories, like articles in the paper. Bloggers simply fill out a form and with the click of a button, the blog post appears at the top of the web page, just above yesterday's news. Over time, the blog becomes a collection of these posts, all archived for easy reference.

Also, each blog post can become a discussion through comments left by readers. Blogs make the news a two-way street. Additionally, Bloggers often work together. In addition to comments, you'll read each other's posts, quote each other and link your blogs together. This creates communities of bloggers that inspire and motivate each other.

Whether it's their ease of use or the opportunities they offer, blogs have been adopted in a very big way. Since 2003, there have been over 70 million blogs created, each with its own version of news. So, the big deal about blogs is that they gave people like you the power of the media and creates a personal kind of news that appeals to a high number of small audiences.

Common Blog Features

- A title that grabs the reader's attention
- An exploration of news ideas and content
- Text that is easy to read and formatted
- Text that is written in a "human" voice (avoid academic-ese)
- Blogs can use any layout and can cover many different topics, but they all have basic characteristics in common.
- Blog entries usually include the date and specific time that they were posted (a timestamp).
- The blogger's name is usually listed with the timestamp. By default, blogs usually end "Posted by [blogger's name]."
- Depending upon the blog site, you may also find other kinds of information with each blog entry.
- Blogs often contain pictures or links to other products
- Readers and the blogger can usually comment on (or reply to) a blog entry. The comments can turn into a dialogue, with the readers and blogger talking together.

Name _____ ID#/Lunch# _____ School _____ Grade _____

BY SALLY VARGAS **Updated May 4, 2020**

How to Make an Omelette

Never fear! Making an omelette at home is not difficult. With a few basic steps and a flip of the wrist you can pull this off in minutes. Fill it with whatever you have on hand—it's a great way to use up leftovers!

Not only is an omelette quick and easy to make, it is a paragon of economy. Odds and ends (a.k.a. leftovers) rise to a new level when placed inside an omelette.

Leftover, cooked vegetables paired with a little cheese and folded into eggs present a much more cheerful meal than a bowl of vegetables haphazardly reheated in the microwave!

FRENCH VERSES AMERICAN OMELETTES

It seems that the French invented omelettes, possibly stealing the idea from the Romans. Let's leave the argument there and just say that the *omelette* has a long history.

A French omelette starts out with beaten eggs in the pan (just like scrambled eggs). The pan is shaken constantly during cooking until the eggs just begin to set. When the eggs are cooked, the omelette is rolled and snugly folded to form an oval and finally turned out onto a plate with the seam side down.

It can be plain or filled, with or without cheese. (An *omelette with fines herbes* is a famous standard French dish. An assortment of chopped herbs is stirred into the eggs before cooking; no cheese.)

American omelettes (or "omelets" as they are sometimes spelled) start out in the same way, but as the eggs cook, the edges are lifted from the sides of the pan with a spatula so the runny eggs can flow underneath.

When the eggs are nearly set, the filling is added and the omelette is folded in half rather than rolled.

HOW TO MAKE AN OMELETTE

For our purposes here, we'll make an American-style omelette and you will see how easy it is to accomplish even if you have never tried to make an omelette before.

Here are the key steps to read before you start so you know where you are going:

1. **Beat the eggs:** Use two or three eggs per omelette, depending on how hungry you are. Beat the eggs lightly with a fork.
2. **Melt the butter:** Use an 8-inch nonstick skillet for a 2-egg omelette, a 9-inch skillet for 3 eggs. Melt the butter over medium-low heat, and keep the temperature low and slow when cooking the eggs so the bottom doesn't get too brown or overcooked.
3. **Add the eggs:** Let the eggs sit for a minute, then use a heatproof silicone spatula to gently lift the cooked eggs from the edges of the pan. Tilt the pan to allow the uncooked eggs to flow to the edge of the pan.
4. **Fill the omelette:** Add the filling—but don't overstuff the omelette—when the eggs begin to set. Cook for a few more seconds
5. **Fold and serve:** Fold the omelette in half. Slide it onto a plate with a silicone spatula.

DON'T OVERSTUFF YOUR OMELETTE!

Use your imagination and what appeals to you for the filling.Channel your inner elegant French cook and don't overstuff the omelette! You should have enough filling to make the omelette tasty, but not so much that it's bursting and spilling out of the eggs. With practice, you will be able to eyeball how much to put in the omelette.

So make an omelet and let me know how you fill it. Share below in the comments.

Name _____ ID#/Lunch# _____ School _____ Grade _____

HOW CORONAVIRUS IS IMPACTING ME AS A HIGH SCHOOL SENIOR March 20, 2020

Growing up, I dreamt of my senior year of high school often—the process of applying to colleges and choosing next steps, the excitement of a new chapter, graduation, and prom. I looked forward to coming together one last time before parting ways. **And after thirteen years of school, here we are, senior year, and things are looking more different than I could've ever imagined.**

In the past week, COVID-19 has altered the course of my life in almost every way possible. Schools in Michigan have closed down for the time being—until April 6th—but as the days pass, our return is looking less and less likely.

I'm set to graduate in a few weeks, yet I brace for the news that the school year may not continue at all, taking with it the senior scavenger hunt, senior skip day, and maybe even graduation itself.

Of course, these worries are the least pressing concern for most of us. Across the country, families are trying to find sources of food to replace school-provided lunch, healthcare workers and grocery clerks are working overtime, people living paycheck-to-paycheck struggle to make ends meet, and people of all ages and backgrounds are falling ill, many losing their lives.

It's difficult to put feelings about all of this into words, in part because of how many emotions there are to feel. The whole world feels as if it's crumbling and yet we're also experiencing extraordinary acts of kindness from our friends and neighbors.

There's a lot of anxiety around whether our loved ones will get sick and overarching fears of the uncertainty of the situation.

It's not often that the world experiences an event that's truly akin to uncharted waters—there is no guidance we can seek from our elders on this, no manual to read. We all are forced to take it day by day. The news feels overwhelming and the quiet feels lonely, so it's a strange place to be.

In some ways, it's nice. Many of us have found ourselves given the gift of time with few commitments—time to explore new hobbies, read books we've been meaning to, spend time outside, and connect with old friends over FaceTime.

But in a lot of ways, the fear of the unknown seeps into everything we do. My family and I are following social distancing recommendations to the best of our ability—however, I know quite a few students and families who are either choosing not to or can't due to work.

In the cases where there is a choice, it's been interesting and disappointing to see whether people choose to put themselves or their community first. My friends and I are staying connected through FaceTime and social media; we're sending each other TikToks and memes because it's become our generation's way to cope.

It's a new normal, and one that will take a lot of getting used to. But there's comfort in the fact that we're all in it together. There are very few things that all human beings across the globe share as a lived experience. My hope is that it teaches us the importance of community care, of radical empathy, and love for humanity.

And to my fellow seniors who are worried about what the future may hold: know that you are strong. We're the kids who came into the world during and shortly after 9/11, who have faced mass shootings in schools, gun violence and hunger in our communities, tumultuous leadership from our government, an intensifying climate crisis, and more.

There's a lot to worry about, but there's also a lot to be thankful for. If we focus on advocating for each other, protecting each other, and loving each other, we can and will get through this.

Do you want to share your experience during unexpected school closures, too? Send an email to blog@xqinstitute.org.

Name _____ ID#/Lunch# _____ School _____ Grade _____

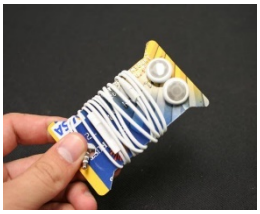
Interesting DIY Tech Accessories, Gadgets, and Gifts by Marly La

Mar 28, 2020

Have you ever wanted to add some oomph to your gadgets? Something to give them some life and make them stand out a bit? We're going to show you 7 gadget projects that will help you do just that.

Now sure, you could buy most of these things at the store, but why pay tons of money for something when you can make it yourself? Right? Detailed instructions will show you how to build these cool projects!

1. Earbud Holders



Earbuds are great but those pesky wires always seem to find some way to tangle up and cause problems. The solution? A convenient holder made from a plastic card. Frugal and functional!

You'll Need:

- An expired plastic credit card or membership card.
- Utility or X-acto Knife (heavy duty)
- Electric drill with drill bit
- Cutting board

2. Cross-Stitch iPhone Cases

There are a ton of great iPhone cases on the market (almost an endless amount), but have you ever wanted a completely unique case? Well, the only way to accomplish that goal is to make your own. Cross-stitch iPhone cases aren't too difficult to make, and they're completely customizable. Pick your favorite pattern and get to work! These would make for a great handmade gift as well.

You'll Need:

- Leese Design's iPhone 4 Cross Stitch Case
- Caroline Vincent's Sampler Workbook: Motifs and Patterns, page 17.
- All threads used in this version are Sajou Retors du Nord 4-ply embroidery floss
- Leaves: 2039, 2405, 2529
- Branches: 2227
- Bird: 2010
- Bird's eye and legs: 2234

4. iPhone Stand

Have you ever wanted to stand your iPhone up on its own for a hands-free, mini-theatre experience? There are products on the market to help you accomplish this, but why spend money when you can make your own? You won't need much to make one of these DIY iPhone stands, and you can customize it with your own fabric as well.

You'll Need:

- Thick cardboard (I used the back of an old note pad)
- Ruler
- Craft Knife
- Fabric (at least 27cm by 30cm)
- Pins
- Large Needle/ Darning Needle and thick thread (Or wool)
- Scissors
- A Sewing Machine (optional)

Final Thoughts: When I think of gadgets I automatically think of cold, bland electronics. That's just often how they are. However, with a bit of craftiness and love, you can bring some warmth and personality into your gadgets. I hope these DIY tech accessories have inspired you to create some awesome accessories for your own gadgets. Let us know what you're planning to create!

Name _____ ID#/Lunch# _____ School _____ Grade _____

	Day 1- Blog 1	Day 2- Blog 2	Day 3- Blog 3
What do you notice about the blog?			
What do you like?			
What do you dislike?			
What is the blogger's purpose in writing?			
Who is the audience?			
What did you learn about blogs by viewing the sample?			

Challenge: Create your own blog

Think about the following questions. Choose 1 of the styles form the blog samples and 1 of the prompts below to create your own blog. Most blogs have pictures- cut out magazines or draw pictures to compliment your blog.

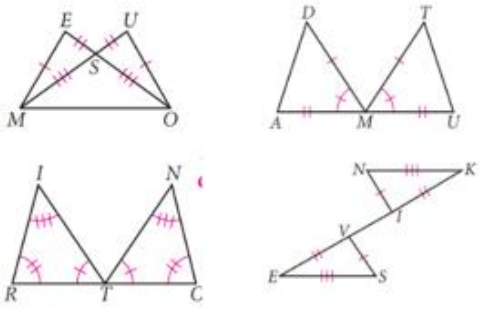
- What hobbies do you have?
- Share a picture of any collections you have or tell your readers how you got interested in a hobby.
- What's the best book you've read lately? What did you like about it?
- Look in your phone choose a picture you've taken recently and tell about it.
- Describe your favorite meal to have for dinner.
- List all the ways you can think of to earn money around the house.
- Review a movie you've watched.
- Tell about your time being restricted by the stay-at-home order.

  - ❖ Be sure to include blog features.
  - ❖ Have someone in your home read your blog, ask them to write a comment to your blog.

IM3 – Week of June 1st

Reasoned Arguments

Which One Doesn't Belong? Why?



Concept Summary Assess

CONCEPT SUMMARY Indirect Proof of $p \rightarrow q$

BY CONTRADICTION

Steps

1. Assume p and $\sim q$ are true.
2. Show that the assumption $\sim q$ leads to a contradiction.
3. Conclude that q must be true.

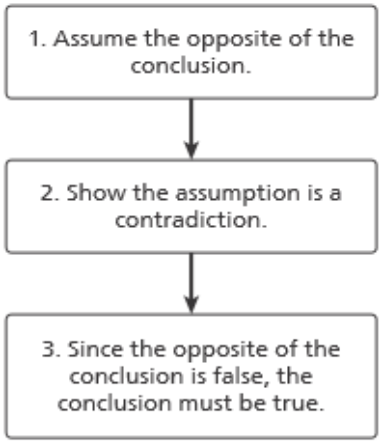
BY CONTRAPOSITIVE

Steps

1. Assume $\sim q$ is true.
2. Show that the assumption leads to $\sim p$, which shows $\sim q \rightarrow \sim p$.
3. Conclude that $p \rightarrow q$ must be true.

Reasoned Arguments Worksheet 1

1. Write the first step of an indirect proof for each statement.



It is snowing outside.

An odd number is not divisible by 4.

2. Chiang and Malcolm wrote the indirect proofs below. Which proof is correct? Explain.

Given: x is an odd number.

Prove: x is not divisible by 4.

Chiang wrote, "Assume that x is divisible by 4. Then $\frac{x}{4} = n$, where n is a whole number. Multiply both sides by 4 to get $x = 4n$, by the Multiplication Property of Equality. $4n$ is divisible by 2, and that contradicts that x is an odd number. Therefore, x is not divisible by 4."

Malcolm wrote, "Assume that x is divisible by 4. Then $\frac{x}{4} = n$, where n is a whole number. Multiply both sides by 4 to get $x = 4n$, by the Multiplication Property of Equality. $4n$ is divisible by 4, and that contradicts that x is an odd number. Therefore, x is not divisible by 4.

3. Write an indirect proof.

Given: $m\angle X \neq m\angle Y$

Prove: $\angle X$ and $\angle Y$ are not both right angles.

Assume that _____ and _____ are both right angles.
Then _____ and _____ by the definition of right angles.
_____ by the Substitution Property of Equality. That contradicts _____, so _____ and _____ are not both right angles.

Reasoned Arguments Worksheet 2

Use indirect reasoning to draw a conclusion in each situation.

1. A factor of a whole number is a whole number that divides evenly into the given number. The number x does not does not divide evenly into 6.

2. A rectangle is a quadrilateral with four congruent angles. An isosceles trapezoid has only two congruent angles.

Write the first step of an indirect proof of each statement.

3. **Prove:** If $x > 6$, then $|x| > 6$.

4. **Prove:** A circle is a figure with no sides.

5. Prove the conditional by proving the contrapositive:
   For two positive integers n and m, if $nm = 4$, then either n or m is 1 or both are 2.

6. **Understand** Consider the conditional, "If a^3 is positive, then a is positive." Jae wrote an indirect proof to prove the conditional. What is Jae's error?

   Assume a^3 is negative and a is positive.

   $-a \times -a \times -a = (-a \times -a) \times -a = a^2 \times -a = -a^3$.

7. **Apply** A new camera phone has two settings. The field of view for the camera phone's panorama mode is 240°. The field of view for the same camera in regular mode is 60°. Write an indirect proof to prove the conditional, "If a photographer wants to take a photo in panorama mode, he will have to turn his camera."

Reasoned Arguments Worksheet 3

1. For an indirect proof, what is the first step to prove that $\angle X$ is a right angle?

   Ⓐ Assume that $\angle X$ is an acute angle.

   Ⓑ Assume that $\angle X$ is an obtuse angle.

   Ⓒ Assume that $\angle X$ is not a right angle.

   Ⓓ Assume that $\angle X$ is a right angle.

2. Which two statements contradict each other?

   I. $\angle 1$ and $\angle 2$ are complementary angles.

   II. $m\angle 2 = 65$

   III. $m\angle 1 + m\angle 2 + m\angle 3 = 90$; $m\angle 3 \neq 0$

   Ⓐ No statements contradict each other.

   Ⓑ I and II

   Ⓒ I and III

   Ⓓ II and III

3. Alana is riding a Ferris wheel with Brianna and either Lindsay, Emily, or Janelle.

   - Lindsay is at the movies.
   - Emily does not like caramel apples.
   - Janelle is afraid of heights and won't go on rides over 15 feet high.

   Who is the third person riding the Ferris wheel?

4. If a conditional statement is true, what statement must also be true?

5. When writing an indirect proof, what statement will be contradicted?

Reasoned Arguments Worksheet 4

The Pythagoreans' discovery that the diagonal of a square with side lengths of 1 unit is not a rational number was an event of huge importance. It brought rigor to mathematical procedure and had a profound effect on philosophy. The proof that $\sqrt{2}$, which is the length of the diagonal, is irrational requires indirect proof, in particular a proof by contradiction.

Complete the proof by contradiction that $\sqrt{2}$ is irrational.

Statement	**Reason**
Suppose that $\sqrt{2}$ is rational.	Assume the contradiction of the conclusion.
$\sqrt{2} = \frac{p}{q}$, where p and q have no common factors, or $\frac{p}{q}$ is written in _____.	Definition of a _____
$2 =$ _____	Definition of the _____
2_____ = _____	_____ Property of _____
p^2 must be even. **Hint:** All even numbers are composed from one factor of 2 and a combination of other prime factors.	Definition of _____
$p^2 = 4(factor) \Leftrightarrow p =$ ___$\sqrt{factor}$	$2 = \sqrt{\_\_\_}$ or $2^2 =$ ___
q^2 is even since $2q^2 = 4(factor) \Leftrightarrow q^2 =$ ___$(factor)$ and q is even since q^2 is even.	Definition of _____
If p and q are both _____, then the assumption that $\frac{p}{q}$ is written in _____ is _____.	Contradiction
Therefore, $\sqrt{2}$ is _____!	Conclusion

When it comes to putting the squeeze on hydrogen, diamonds make the point

By Los Angeles Times, adapted by Newsela staff on 01.14.16
Word Count **900**
Level **1240L**

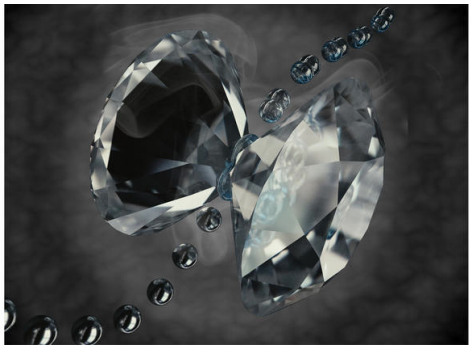
A model displays a 110.03-carat Sun-Drop Diamond described as fancy vivid yellow at a Sotheby's preview show in Geneva, Switzerland, Nov 9, 2011. Photo: AP/Anja Niedringhaus. BOTTOM: This artistic representation shows a hydrogen molecule being compressed by two diamond anvils. Scientists believe they've discovered a new physical state of hydrogen using this device. Berkeley Lab via Twitter/Philip Dalladay-Simpson and Eugene Gregoryanz

Molecular hydrogen is normally a gas at room temperature. But when crushed between diamond anvils, it can convert into a totally different, previously unknown state of matter, according to a team of physicists.

The discovery, described in the journal Nature, poses a significant step toward finding what has been called the holy grail of high-pressure physics: solid metallic hydrogen.

Hydrogen is the most abundant element in the universe — stars are made almost entirely out of the stuff, with a little helium and traces of heavier chemicals for good measure. It's an essential ingredient in the building blocks of life, an atom necessary to make water and organic molecules. Hydrogen is extremely lightweight, often found as a gas of molecular hydrogen — two hydrogen atoms bonded together by two electrons. Made up of a single proton and electron, it is the most

basic atom in the universe, and has been used as an important model for scientists studying physics at smaller scales.



Hydrogen Rare In Earth's Atmosphere

In spite of all this, relatively little is known about hydrogen's behavior in extreme conditions, said study coauthor Philip Dalladay-Simpson, a high-pressure physicist at the University of Edinburgh in Scotland. High pressure physicists study how materials behave under conditions of high pressure, high temperature and high strain.

Little is known about molecular hydrogen gas, because it is pretty rare in Earth's atmosphere. At Earth's temperatures and pressures it remains a gas and never becomes a solid or liquid. That's not the case with other planets such Jupiter, a gas giant that holds enormous amounts of hydrogen under extreme pressures and temperatures, and contains gas hydrogen in its atmosphere and liquid and solid hydrogen inside the planet.

So, if we want to fully understand the stars and planets around us, we have to have a better fundamental understanding of how hydrogen behaves.

Long A Rocket Fuel

Understanding hydrogen "can open up windows to large astrophysical bodies," Dalladay-Simpson said, "such as the interiors of the hydrogen-rich Jovian planets such as Jupiter."

We know a little bit about how hydrogen's physical state changes under different conditions. Hydrogen can become a liquid at extremely cold temperatures, and has long been used as liquid rocket fuel. At high temperatures like those found in the corona of the sun, the atom's electrons are stripped from the protons and forms a gas known as plasma.

Since 1935, scientists have predicted that, under extreme pressures but at mild temperatures, hydrogen should actually form a solid. If the bonds holding two hydrogen molecules together break apart, its electrons would roam free. Then the normally clear gas would become a shiny, grayish metal.

Solid Hydrogen Has Been Elusive

Finding solid hydrogen through actual experiments, however, has proven to be far more difficult than scientists expected, Dalladay-Simpson said. At first, scientists figured that hydrogen would become a solid if molecular hydrogen was put under 25 billion pascals, or 25 gigapascals (GPa), of pressure. Dalladay-Simpson called this "an unfathomable pressure for the time." A pascal is a unit of pressure.

"Since (then) we've far exceeded 10 times this pressure, and it remains experimentally elusive," Dalladay-Simpson said. "As such it has often been dubbed as the 'holy grail' of high-pressure physics."

To get at this question, Dalladay-Simpson and colleagues took hydrogen molecules and crushed them between two diamonds. They kept the temperature a balmy 80 degrees Fahrenheit but

raising the pressure to 325 gigapascals. It was the equivalent to 3.21 million Earth atmospheres. Atmospheric pressure is the force of the weight of the air on a surface.

“These experiments are highly technically demanding," Dalladay-Simpson said. "To reach the pressures desired, we have to use two brilliant-cut diamonds (the same as in your jewelry) but with the tips polished to a very fine point (8 microns, typically the width of a human hair),” Dalladay-Simpson said. “A small amount of hydrogen gas is then trapped between them and pressurized to greater pressures that are found at the center of the Earth." The scientists used an amount of hydrogen about the size of a single human red blood cell.

Solid Metallic Hydrogen Could Feature Far-Out Properties

The scientists found that at these pressures, the structure of the material started to change in significant ways. Though it’s hard to say what a chunk of hydrogen in this state would look like, it might resemble layers of molecular hydrogen interspersed with layers of atomic hydrogen. It would be like hydrogen gas sandwiched between layers of metallic hydrogen. With that in mind, it could well be the first stage of the long-theorized solid metallic state, in which all molecular bonds are broken down.

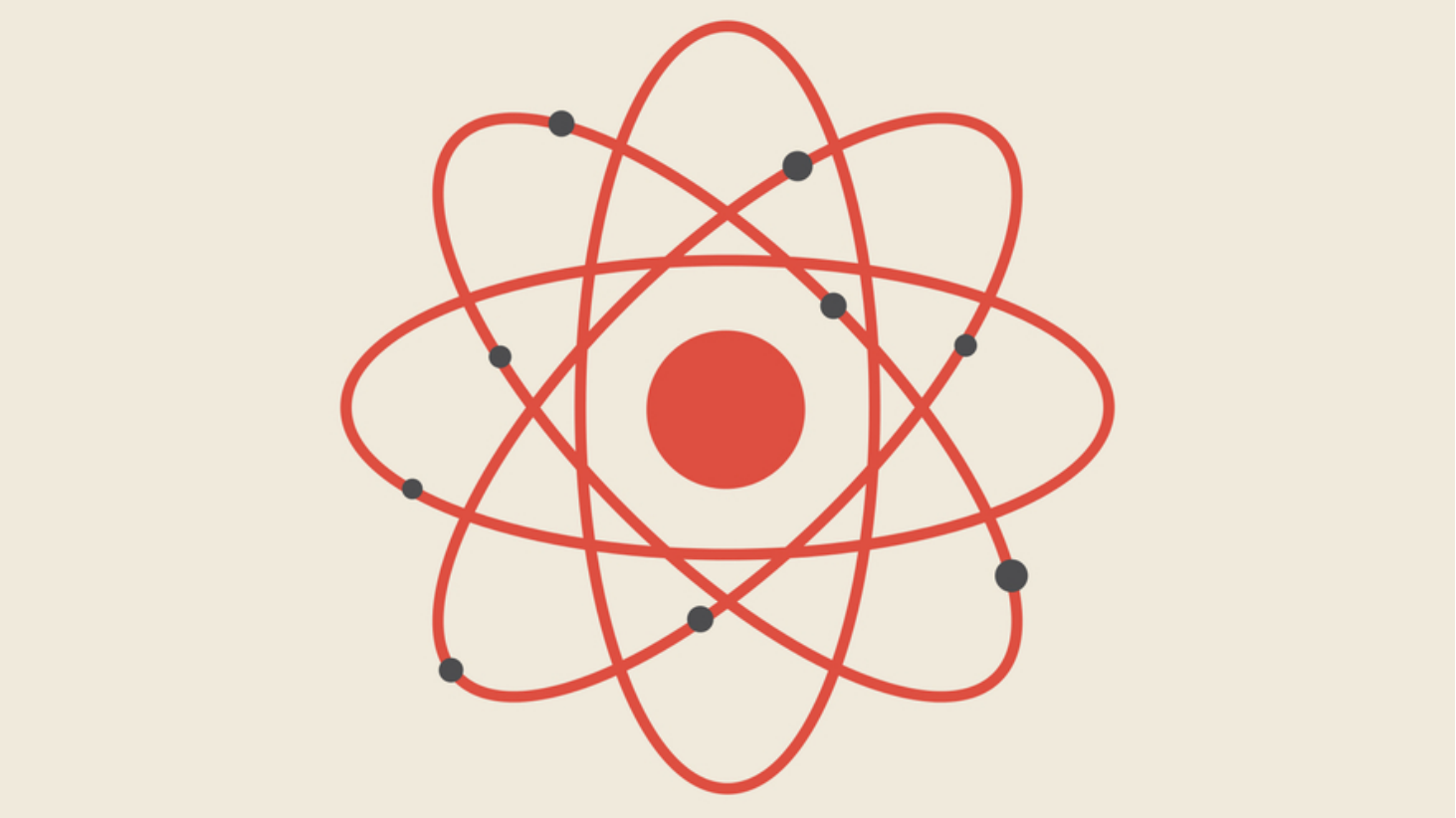
The next step is to ratchet the pressure up by a few tens of gigapascals to see if they can actually reach the predicted metallic state. Dalladay-Simpson said that shouldn’t be too hard, “considering we reached 400 GPa,” Dalladay-Simpson said.

Solid metallic hydrogen might exhibit such far-out properties as superfluidity and superconductivity. If solid metallic hydrogen were ever able to be mass produced, it could have game-changing technological implications, he added.

For example, Magnetic Resonance Imaging machines, which are used to take pictures of organs and other structures inside the body, use super cold liquid helium to cool down their magnets. Room-temperature hydrogen would reduce the size of these machines significantly. They would also increase the efficiency of all electronics, he said.

Matter and Energy: What are atoms?

By Encyclopaedia Britannica, adapted by Newsela staff on 03.31.17
Word Count **522**
Level **MAX**



An illustration of an atom. The nucleus, containing neutrons and protons, is at the center. Circling around it are electrons. Image from: Pixabay.

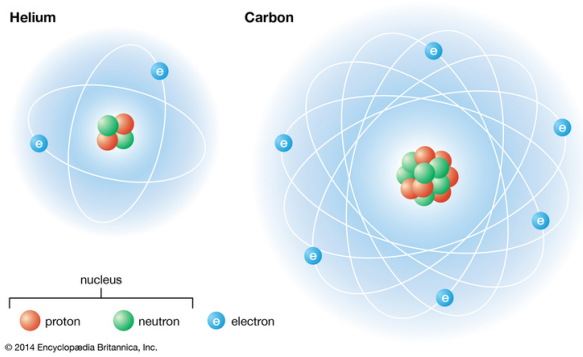
The tiny particles called atoms are the basic building blocks of all matter. Atoms can be combined with other atoms to form molecules, but they cannot be divided into smaller parts by ordinary means.

The word atom derives from the Greek word atomos, which means "indivisible." The ancient Greeks were the first to think of the atom as the basic unit of all matter, but it was not until the early 1800s that scientists began to understand how atoms work.

Structure

Most of an atom consists of empty space. Its mass is concentrated in its center, which is called the nucleus. The nucleus consists of protons and neutrons. (The ordinary hydrogen atom is an exception; it contains one proton but no neutrons.) Protons carry a positive electrical charge, while neutrons carry no electrical charge. Circling the nucleus is a cloud of negatively charged electrons.

Scientists believe that subatomic particles — protons, neutrons and electrons — are themselves made up of smaller substances. The substances are called quarks and leptons.



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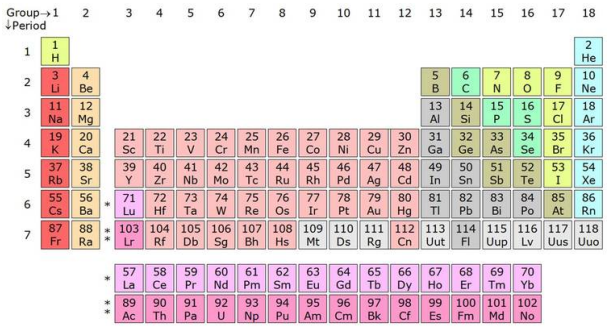

important thing to know about an atom is how many protons it has in its nucleus. This is known as its atomic number. The atomic number determines what kind of atom it is. Every atom is associated with a specific chemical element. An atom is the smallest unit of an element, and each chemical element has a unique atomic number. For instance, hydrogen has an atomic number of 1 because every hydrogen atom has one proton in its nucleus. No other element has an atomic number of 1.

Two other related properties of atoms are the mass number and the atomic weight. The mass number is equal to the total number of protons and neutrons in an atom. The atomic weight is equal to the mass number divided by a certain number that scientists have come up with. The mass number and atomic weight are very similar. For example, for carbon, the mass number is 12, and the atomic weight is 12.011.

Atoms that have the same atomic number but different mass numbers are called isotopes. Carbon-12, the ordinary form of carbon, has six protons and six neutrons per atom. Carbon-14 is an isotope with eight neutrons per atom. It still has six protons. If it did not have six protons, it would not be carbon.

An ordinary atom has an equal number of protons and electrons. So the positive and negative charges are balanced. Some atoms, however, lose or gain electrons in chemical reactions or in collisions with other particles. Ordinary atoms that either gain or lose electrons are called ions. If a neutral atom loses an electron, it becomes a positive ion. If it gains an electron, it becomes a negative ion.

Responsible for the Cold War

Benchmark Standard	History 3a: Students will compare competing historical narratives, by contrasting different historians' choice of questions, use and choice of sources, perspectives, beliefs, and points of view, in order to demonstrate how these factors contribute to different interpretations.
Grade Band	11-12
Vocabulary / Key Concepts	**Communism**: is a political and economic ideology that positions itself in opposition to liberal democracy and capitalism, advocating instead a classless system in which the **means** of production are owned communally and private property is nonexistent or severely curtailed. **Capitalism**: an economic and political system in which a country's trade and industry are controlled by private owners for profit, rather than by the state. **Truman Doctrine**: the principle that the US should give support to countries or peoples threatened by Soviet forces or Communist insurrection. First expressed in 1947 by US President Truman in a speech to Congress seeking aid for Greece and Turkey, the doctrine was seen by the Communists as an open declaration of the Cold War. **Marshall Plan**: also known as the European Recovery Program, was a U.S. program providing aid to Western Europe following the devastation of World War II. It was enacted in 1948 and provided more than $15 billion to help finance rebuilding efforts on the continent.

~This is a Stanford History Education Group (SHEG) lesson, modified by CSD for use at home~

ACTIVITY 1: Answer the following questions on a separate sheet of paper.

1. What do you know, (if anything), about the Cold War?

Read and observe the pictures of the following information:

Remember:

- The United States and the Soviet Union were allies in World War II.
- After WWII, Europe was in ruins, and former colonial empires were crumbling. This set the scene for increased competition between the two superpowers, the U.S. and the U.S.S.R.
- The Soviet Red Army remained in Eastern Europe after the war, which led to the Soviet Bloc. At the same time, the United States developed policies of containment – in particular, the Truman Doctrine and the Marshall Plan.

Timeline of the Early Cold War

1945: February 4-11 - Yalta Conference
1945: August 6 - United States first used atomic bomb in war
1945: August 8 - Russia enters war against Japan
1945: August 14 - Japanese surrenders, ending World War II
1946: March - Winston Churchill delivers "Iron Curtain" speech
1947: March - Truman announces Truman Doctrine
1947: June - Marshall Plan is announced
1948: February - Communist takeover in Czechoslovakia
1948: June 24 - Berlin blockade begins 1949: July - NATO treaty ratified
1949: May 12 - Berlin Blockade ends
1949: September - Mao Zedong, a communist, takes control of China
1949: September - Soviets explode first atomic bomb
1955: May – Warsaw Pact

The Iron Curtain

Winston Churchill with President Truman just before the Iron Curtain Speech

Map of the "Iron Curtain"

The Truman Doctrine, 1947

President Truman in 1945

President Truman outlined the Truman Doctrine to a joint session of Congress in March of 1947

The Marshall Plan, 1947

Nations that had received Marshall Plan aid by 1950

Marshall Plan, 1947

Two years after the war Stuttgart's inner city still reflected the destruction of urban centers during wartime bombing. | **1947** **1955** | *Marshall Plan funds helped provide for the rebuilding of cities. Photos on these two pages were taken from the same spot.*

Stuttgart, Germany before and after Marshall Plan aid

NATO Treaty, 1949. Warsaw Pact, 1955

Central Historical Question: Who started the Cold War?

- Over the past decades historians have disagreed over this question. Today, you are going to look closely at some Cold War documents in order to address the question for ourselves.

ACTIVITY 2: Read Documents A and B and answer the corresponding Guiding Questions on a separate sheet of paper.

Document A: The Iron Curtain Speech (Modified)

It is my duty, however, to place before you certain facts about the present position in Europe.

From Stettin in the Baltic to Trieste in the Adriatic an iron curtain has descended across the Continent. Behind that line lie all the capitals of the ancient states of Central and Eastern Europe. Warsaw, Berlin, Prague, Vienna, Budapest, Belgrade, Bucharest and Sofia; all these famous cities and the populations around them lie in what I must call the Soviet sphere, and all are subject, in one form or another, not only to Soviet influence but to a very high and in some cases increasing measure of control from Moscow.

In a great number of countries, far from the Russian frontiers and throughout the world, Communist fifth columns are established and work in complete unity and absolute obedience to the directions they receive from the Communist center.

I do not believe that Soviet Russia desires war. What they desire is the fruits of war and the indefinite expansion of their power and doctrines.

But what we have to consider here today while time remains, is the permanent prevention of war and the establishment of conditions of freedom and democracy as rapidly as possible in all countries.

Source: Excerpt from the "Iron Curtain Speech" delivered by Winston Churchill, March 1946 in Fulton, Missouri.

Document B: The Truman Doctrine (Modified)

The United States has received from the Greek Government an urgent appeal for financial and economic assistance…Greece is in desperate need of financial and economic assistance to enable it to resume purchases of food, clothing, fuel, and seeds.

The very existence of the Greek state is today threatened by the terrorist activities of several thousand armed men, led by Communists, who defy the government's authority. . . . Greece must have assistance if it is to become a self-supporting and self-respecting democracy. The United States must supply this assistance. . . . No other nation is willing and able to provide the necessary support for a democratic Greek government.

One of the primary objectives of the foreign policy of the United States is the creation of conditions in which we and other nations will be able to work out a way of life free from coercion.

It is necessary only to glance at a map to realize that the survival and integrity of the Greek nation are of grave importance in a much wider situation. If Greece should fall under the control of an armed minority, the effect upon its neighbor, Turkey, would be immediate and serious. Confusion and disorder might well spread throughout the entire Middle East. . . . Should we fail to aid Greece and Turkey in this fateful hour, the effect will be far reaching to the West as well as to the East.

The free peoples of the world look to us for support in maintaining their freedoms. If we falter in our leadership, we may endanger the peace of the world. And we shall surely endanger the welfare of this nation.

Great responsibilities have been placed upon us by the swift movement of events.

Source: Excerpt from the "Truman Doctrine Speech," delivered by President Truman to Congress on March 12, 1947.

GUIDING QUESTIONS

Iron Curtain Speech

1. Sourcing: Who was Winston Churchill? Why would Americans trust what he has to say about the Soviet Union?
2. Close reading: What does Churchill claim that the Soviet Union wanted?

Truman Doctrine

1. Close reading: Why did Truman believe Greece needed American aid in 1947?
2. Context: What does Truman mean when he claims, "Should we fail to aid Greece and Turkey in this fateful hour, the effect will be far reaching to the West as well as to the East"?
3. Close reading: Does Truman present American policy as offensive or defensive? What words or phrases does Truman use to present policy this way?

Record your first hypothesis: Who was primarily responsible for the Cold War - the United States or the Soviet Union?

ACTIVITY 3: Read Documents C and D and answer the corresponding Guiding Questions on a separate sheet of paper.

Document C: Soviet Ambassador Telegram (Modified)

The foreign policy of the United States, which reflects the imperialist tendencies of American monopolistic capital, is characterized in the postwar period by a striving for world supremacy. This is the real meaning of the many statements by President Truman and other representatives of American ruling circles; that the United States has the right to lead the world. All the forces of American diplomacy -- the army, the air force, the navy, industry, and science -- are enlisted in the service of this foreign policy. For this purpose broad plans for expansion have been developed and are being implemented through diplomacy and the establishment of a system of naval and air bases stretching far beyond the boundaries of the United States, through the arms race, and through the creation of ever newer types of weapons. . . .

During the Second World War . . . [American leaders] calculated that the United States of America, if it could avoid direct participation in the war, would enter it only at the last minute, when it could easily affect the outcome of the war, completely ensuring its interests.

In this regard, it was thought that the main competitors of the United States would be crushed or greatly weakened in the war, and the United States by virtue of this circumstance would assume the role of the most powerful factor in resolving the fundamental questions of the postwar world.

Source: Excerpt from a telegram sent by Soviet Ambassador Nikolai Novikov to Soviet Leadership in September 1946.

Document D: Henry Wallace (Modified)

I have been increasingly disturbed about the trend of international affairs since the end of the war.

How do American actions appear to other nations? I mean actions [like] the Bikini tests of the atomic bomb and continued production of bombs, the plan to arm Latin America with our weapons, and the effort to secure air bases spread over half the globe from which the other half of the globe can be bombed. I cannot but feel that these actions must make it look to the rest of the world as if we were only paying lip service to peace at the conference table.

These facts rather make it appear either (1) that we are preparing ourselves to win the war which we regard as inevitable or (2) that we are trying to build up a predominance [largest amount] of force to intimidate the rest of mankind.

Our interest in establishing democracy in Eastern Europe, where democracy by and large has never existed, seems to [the Soviets] an attempt to reestablish the encirclement of unfriendly neighbors which might serve as a springboard of still another effort to destroy [them].

Source: Secretary of Commerce and former Vice President Henry A. Wallace letter to President Harry S. Truman, July 23, 1946. Truman asked Wallace to resign shortly after this letter.

GUIDING QUESTIONS

Soviet Ambassador Telegram

1. Sourcing: Who was Nicholas Novikov? When did he write this telegram?
2. Close reading: How does Novikov describe the United States? What evidence does he use to support his description?
3. Context: What does Novikov claim the United States planned during the Second World War?

Henry Wallace Letter

1. Sourcing: Who was Henry Wallace? When did he write this letter?
2. Close Reading: What is Wallace's main argument?
3. Corroboration: How does Wallace's description of American foreign policy compare to Truman's and Novikov's?

Record your second hypothesis: Who was primarily responsible for the Cold War - the United States or the Soviet Union?

ACTIVITY 4: OVERARCHING QUESTIONS

1. Which of these documents do you believe is most trustworthy? Why?
2. Did anyone's hypothesis change? How and why?
3. What other evidence would you need to strengthen your claim?
4. Who was primarily responsible for the start of the Cold War? What evidence do you have to support your claim? Explain and support your answer with the evidence.