

Student Sample: Grade 12, Argument

This essay on dress codes was written for a university/college placement assessment. Two different perspectives on an issue (whether or not dress codes should be adopted in school) were provided in the prompt, and students were advised to either support one of the two points of view given or present a different point of view on the issue. The students were allowed thirty minutes to write.

I believe that it would be beneficial for our schools to adopt dress codes. Although some may argue that this action would restrict the individual student's freedom of expression, I do not agree. Our right to express ourselves is important, but in our society none of us has unrestricted freedom to do as we like at all times. We must all learn discipline, respect the feelings of others, and learn how to operate in the real world in order to be successful. Dress codes would not only create a better learning environment, but would also help prepare students for their futures.

Perhaps the most important benefit of adopting dress codes would be creating a better learning environment. Inappropriate clothing can be distracting to fellow students who are trying to concentrate. Short skirts, skimpy tops, and low pants are fine for after school, but not for the classroom. T-shirts with risky images or profanity may be offensive to certain groups. Students should express themselves through art or creative writing, not clothing. With fewer distractions, students can concentrate on getting a good education which can help them later on.

Another benefit of having a dress code is that it will prepare students to dress properly for different places. When you go to a party you do not wear the same clothes you wear to church. Likewise, when you dress for work you do not wear the same clothes you wear at the beach. Many professions even require uniforms. Having a dress code in high school will help students adjust to the real world.

Lastly, with all the peer pressure in school, many students worry about fitting in. If a dress code (or even uniforms) were required, there would be less emphasis on how you look, and more emphasis on learning.

In conclusion, there are many important reasons our schools should adopt dress codes. Getting an education is hard enough without being distracted by inappropriate t-shirts or tight pants. Learning to dress for particular occasions prepares us for the real world. And teens have enough pressure already without having to worry about what they are wearing.

Annotation

The writer of this piece

- **introduces a precise, knowledgeable claim.**
 - *I believe that it would be beneficial for our schools to adopt dress codes.*
- **establishes the significance of the claim, distinguishing the claim from alternate or opposing claims.**
 - *Although some may argue that this action would restrict the individual student's freedom of expression, I do not agree. Our right to express ourselves is important, but in our society none of us has unrestricted freedom to do as we like at all times. We must all learn discipline, respect the feelings of others, and learn how to operate in the real world in order to be successful.*
- **creates an organization that logically sequences claim, counterclaims, reasons, and evidence.**
 - *I believe that it would be beneficial for our schools to adopt dress codes. Although some may argue . . . Perhaps the most important benefit . . . Another benefit . . . Lastly . . . In conclusion . . .*
- **develops the claim and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both (though the evidence provided is limited by the constraints of an on-demand assessment).**
 - *Perhaps the most important benefit of adopting dress codes would be creating a better learning environment. Inappropriate clothing can be distracting to fellow students who are trying to concentrate.*

- *Another benefit of having a dress code is that it will prepare students to dress properly for different places. When you go to a party you do not wear the same clothes you wear to church.*
- *If a dress code (or even uniforms) were required, there would be less emphasis on how you look, and more emphasis on learning.*
- **develops the claim in a manner that anticipates the audience’s knowledge level, concerns, values, and possible biases.**
 - The writer addresses an unknown adult audience likely to appreciate values such as *discipline, respect [for] the feelings of others, and the creation of a better learning environment.*
- **uses words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim and reasons, between reasons and evidence, and between claim and counterclaims.**
 - *Although some may argue . . . Perhaps the most important benefit . . . With fewer distractions . . . Another benefit . . . When . . . Likewise . . . If a dress code (or even uniforms) were required . . . Lastly . . . In conclusion . . .*
- **establishes and maintains a formal style and objective tone.**
- **demonstrates good command of the conventions of standard written English (with occasional errors that do not interfere materially with the underlying message).**

Student Sample: Grade 12, Argument

This essay was produced in a two-hour-long college placement exam. Students first read a passage of approximately a thousand words titled “In Praise of Boredom.” The passage was adapted from an essay published by Ellen Ruppel Shell in 2000. Students were then asked to respond to Shell’s views, drawing on anything else they had previously read, their observations, and/or their experiences.

Freedom From Structure

Children are blank slates that are subject to the environment around them. Allowing a child to interact with their surroundings is difficult for adults because it leaves each decision, and each consequence of that decision, up to them. Ellen Ruppel Shell believes that children miss out on experimenting and discovering aspects of the world that cannot be taught in a classroom or read about in a book. I agree that children can learn many important lessons about social interaction and the products of creativity by playing on their own, or with other children, in a free and open environment.

To relieve the inevitable boredom that every child eventually encounters, they can nourish their creative minds by playing alone. As a child, I was content to sometimes play by myself in a land of make-believe. If it was cold and rainy outside, I would pretend it was the middle of summer. Night became day, my bedroom became a kingdom, my bed was a castle, my floor was a mote, and I was a princess. Playing “let’s pretend” allowed me to imagine and create my own world when reality seemed too mundane. “Boredom leads to exploration, which leads to creativity,” and nothing is more creative than a world that exists in the mind of a child.

There are endless opportunities for parents to stimulate and teach their kids that come with instructions and rules and boundaries, but I agree with Shell when she declares that “the best play is spontaneous and unpredictable.” Plain and simple freedom is invaluable, and we are only so free as children. As we grow up, our minds become molded around society’s rules and we learn to conform to a certain way of thinking and creating. If adults see a soccer ball, they will only think of how to play soccer. If children see a soccer ball they will immediately create their own rules and proceed with an entirely different game. The ability to be spontaneous and imaginative is strongest in children because they know nothing else. Adults and parents that bombard their kids with structured activities are wasting the unique and innate ability of children to create; however, a parent’s reasoning for such structure is not unsupported.

There are many life lessons that can be difficult to learn on your own, so adults establish controlled environments for their children to learn about the world. For example, making new friends can be an awkward and terrifying process for kids, so parents will try to make friends for their children. What most adults don’t realize is that they are robbing their child of a chance to open up and reach out to another person. The kid they meet on the jungle gym will be more beneficial to them than the kid their parent forced them to play with. “We don’t believe that they can navigate the world, so we try to navigate it for them.” Shell believes that adults need to trust their kids to discover the world for themselves and that it’s just as important for them to fail as it is for them to succeed.

For children, it’s not about the final product, it’s how they get there. When forced to follow rules and obey boundaries, kids are not given the opportunity to use their imagination. I agree with Shell and I believe that it is more beneficial for children to make believe, be spontaneous, and discover as much as they can about the world for themselves.

Annotation

The writer of this piece

- **introduces a precise, knowledgeable claim.**
 - *I agree that children can learn many important lessons about social interaction and the products of creativity by playing on their own, or with other children, in a free and open environment.*

- **establishes the significance of the claim, distinguishing the claim from alternate or opposing claims.**
 - *Allowing a child to interact with their surroundings is difficult for adults because it leaves each decision, and each consequence of that decision, up to them.*
- **creates an organization that logically sequences claim, counterclaims, reasons, and evidence.**
 - *I agree that children . . . they can nourish their creative minds by playing alone. . . . As a child, I was . . . but I agree with Shell when she declares . . . As we grow up . . . There are many life lessons that can be difficult to learn on your own . . . What most adults don't realize . . . For children, it's not about the final product . . . I agree with Shell and I believe . . .*
- **develops the claim and counterclaims fairly and thoroughly, supplying the most relevant evidence for each while pointing out the strengths and limitations of both.**
 - *Allowing a child to interact with their surroundings . . . leaves each decision, and each consequence of that decision, up to them.*
 - *Ellen Ruppel Shell believes that children miss out on experimenting and discovering aspects of the world that cannot be taught in a classroom or read about in a book.*
 - *. . . they can nourish their creative minds by playing alone.*
 - *There are many life lessons that can be difficult to learn on your own, so adults establish controlled environments for their children to learn about the world.*
 - *When forced to follow rules and obey boundaries, kids are not given the opportunity to use their imagination.*
- **develops the claim in a manner that anticipates the audience's knowledge level, concerns, values, and possible biases.**
 - *. . . making new friends can be an awkward and terrifying process for kids, so parents will try to make friends for their children. What most adults don't realize is that they are robbing their child of a chance to open up and reach out to another person.*
- **uses words, phrases, and clauses as well as varied syntax to link the major sections of the text, create cohesion, and clarify the relationships between claim and reasons, between reasons and evidence, and between claim and counterclaims.**
 - *As a child . . . As we grow up . . . For example . . .*
 - *To relieve the inevitable boredom that every child eventually encounters, they can nourish their creative minds by playing alone. As a child, I was content to sometimes play by myself in a land of make-believe. . . . "Boredom leads to exploration, which leads to creativity," and nothing is more creative than a world that exists in the mind of a child.*
 - *There are endless opportunities for parents to stimulate and teach their kids that come with instructions and rules and boundaries, but I agree with Shell when she declares that "the best play is spontaneous and unpredictable."*
- **provides a concluding statement that follows from and supports the argument presented.**
 - *I agree with Shell and I believe that it is more beneficial for children to make believe, be spontaneous, and discover as much as they can about the world for themselves.*
- **demonstrates good command of the conventions of standard written English (with occasional errors that do not interfere materially with the underlying message).**

Student Sample: Grade 12, Informative/Explanatory

The essay that follows was written for an Advanced Placement U.S. history class. The student had unlimited time to write and likely received feedback and instructional support while creating the essay. (Essay ©2009 by The Concord Review, Inc. Reprinted with permission.)

In the Wake of the Spanish Lady: American Economic Resilience in the Aftermath of the Influenza Epidemic of 1918

*Whatever does not kill me makes me stronger.*¹
—Friedrich Nietzsche

America in the years leading up to 1918 was as confident in its medical ability as it had ever been. In only one century, it had seen the successful vaccination, containment, or cure for the notorious menaces of smallpox, anthrax, rabies, meningitis, typhoid, malaria, yellow fever, diphtheria, cholera, and tetanus.² Due to the new strides in bacteriology, germ theory, and sanitation, as well as new methods devised to control food-, water-, and insect-borne diseases, Americans were experiencing an era of unprecedented health. Whereas in all previous wars, more American soldiers were lost to disease than in action, American troops in World War I saw an all-time low in the number of deaths due to disease. Army camp inspections, carried out by William Henry Welch, the respected doctor and assistant to the Army Surgeon General, revealed that, though camps were overcrowded, “the health of the army proved to be as good as any reasonable doctor could expect.”³ Unfortunately, the new light that had been shed on disease control did not apply to air-borne viruses. Because neither antibiotics nor a way to control the spread of air-borne diseases had been invented yet, America was as vulnerable to the deadly grip of influenza that would befall it in 1918 as Medieval Europe had been to the Bubonic Plague of the 14th century.

More people died of the Spanish Flu in the 10 months that it devastated the world than had died of any other disease or war in history. A commonly cited estimate of deaths is 21 million worldwide, yet prominent demographer Kingsley Davis estimates that the disease killed approximately 20 million in the Indian subcontinent alone.⁴ The actual number of deaths will never be known, but the modern estimate is somewhere between 50 and 100 million.⁵ If an equal percentage of the world population died today, that would be close to 2 billion victims.⁶ A bare minimum of 550,000 Americans, or .5 percent of the American population, died in the apocalyptic pandemic.⁷ Yet, due to some historical and demographic particulars of the 1918 flu, the American economy—which nearly collapsed in some areas during the outbreak—was not crippled in any lasting way.

The flu is not generally thought of as a killer. Instead, it is perceived as a pesky annual virus, slightly more troublesome than the common cold, but nothing serious. In reality, the average yearly flu is an extremely virulent disease, infecting anywhere from 30 to 60 million Americans annually, of whom about 36,000 die (usually the very old or the very young.)⁸ It mutates so frequently that humans are never fully immune to it, so a yearly vaccine must be produced to counteract it, whereas most viruses require only one vaccination in a lifetime.⁹ The killer flu of 1918, dubbed the Spanish Flu or the Spanish Lady, was a particularly deadly mutation of this influenza virus.¹⁰ In comparison to the .1 percent of infected who die of the annual flu, it killed 2.5 percent of those who contracted it.¹¹ This mutation had a propensity to cause pneumonia, untreatable at the time, and clogged its victims’ lungs with bloody sputum until their faces turned dark purple and they died of suffocation.¹²

The origins of the Spanish Flu are uncertain, but most experts believe that the first wave in the U.S. emerged in Fort Riley, Kansas, on March 11, 1918, when one of the men came down with a milder form of the mysterious illness.¹³ As of the next day, 414 soldiers had contracted the virus, and by the end of the week at least 500 were sick.¹⁴ In total, 48 men died from the first influenza-pneumonia strain by the time it had run its course in the camp—too low a number to merit any concern in the medical community in 1918.¹⁵ Even though the virus struck at least 13 other military camps, there was sparse evidence that civilians were similarly affected, and, besides, disease was a fact of life in any military camp.¹⁶ So, little attention was directed to the budding pandemic. America instead focused on the new draft calls, the war in Europe, the suffragette movement, and the Bolshevik tumult in Russia, while ignoring the mild outbreak of a hard-to-identify flu.¹⁷

As expected, the flu subsided quickly with a forgettable number of casualties. Unforeseen, however, was the deadlier second wave that would emerge that August to explode in September with

unprecedented virulence. Influenza viruses thrive in cold, dry weather, which is why flu season tends to be during the winter.¹⁸ The fact that it exploded like it did in August, which is neither cold nor dry, makes this flu remarkable. The epidemic first struck Camp Devens, an overcrowded military camp thirty miles from Boston, on September 8 after brewing in Europe for about a month.¹⁹ From there, it spread to the rest of the United States in an unsettlingly erratic manner, hitting most of the East coast, then some of the Midwest and the Gulf Coast region, then the West coast, and ultimately striking the interior.²⁰ Although at times slow in reaching certain regions, the Spanish Flu was horrifyingly thorough in its damages.

Nearly every city in the United States was affected economically by the flu in the short-term. In many places, the workforce was paralyzed because 21-to-29-year-olds suffered the greatest casualties.²¹ So many people died at uncommonly young ages that the average life expectancy dropped 12 years, from 51 in 1917 to 39 in 1918.²² Whether or not the infected had been young, healthy, and robust prior to contracting the flu was of little consequence. The military, which consisted of a particularly young, healthy, and robust demographic, was hit the hardest of any social group in America: 40 percent of the Navy and 36 percent of the Army developed the flu in 1918.²³ With victims' average age being 33, the volume of death claims by flu victims blind-sided the life insurance companies.²⁴ One life insurance company handled \$24 million worth of unanticipated death claims for 68,000 deaths.²⁵ The fact that the majority of victims were in the prime of their lives defied actuarial projections, confusing insurance companies, destroying families, and disrupting the economy at large.

In the most severe stages of the flu, the “essential services” of cities verged on collapse as policemen, firemen, garbage collectors, telephone operators, and even the doctors, nurses, and social workers who were struggling to fight the flu, were absent from work.²⁶ The Bureau of Child Hygiene strove to handle an overwhelming population of orphans as the fathers and mothers of America, those in the most vulnerable age-range, were decimated by influenza.²⁷ Employment standards plummeted, the only requirement in some places being “two hands and willingness to work.”²⁸ Worst off of any “essential service” were the processors of the dead. As morgues filled up, in some places with bodies stacked three and four high, corpses accumulated in the streets, spreading bacteria and the residual influenza virus.²⁹ In some situations, the dead were left untended, festering in their homes for days.³⁰ The primary emergency during the flu was in these “essential services,” which could not have held out much longer than they did. While those services continued functioning, even at a minimal level, the rest of the economy was able to rebound to normal capacity within three years, the “Roaring Twenties” as evidence of this resilience. Despite the chaos, the nation persisted.

In *The Review of Economic Statistics* of December 1919, the year 1919 was deemed a “year of readjustment,” one in which the United States was healing from the tensions of 1918.³¹ According to the article, in 1918, “industries were straining their energies to meet the unusual demands occasioned by the war,” yet it should be noted that the strain was also partially due to the Spanish Flu.³² In one county in West Virginia, during the fall of 1918, the three months of flu had left 6,000 ill, of whom 500 died.³³ This sapped the county economy to near-collapse as 80 percent of the labor force fell ill.³⁴ Coupled with the large population overseas for the war, situations like this compromised cities across the nation, especially with Surgeon General of the Army William Crawford Gorgas shipping thousands of America’s fittest young doctors and nurses to Europe, where he believed they were most necessary.³⁵ The doctors and nurses who continued to serve at home, like many of the civilians who remained, were generally too old, or too young, or too disabled to adequately respond to the Spanish Flu.³⁶

When the epidemic reached cities with a deficient work force and incompetent, sparse medical care, the critical damage to the economy was compounded by restrictive public health ordinances. In an effort to restrict exposure to the virus, the Surgeon General had issued public health ordinances that prohibited most public gatherings and required gauze masks to be worn at all times.³⁷ In Philadelphia alone, it is estimated that theaters, cinemas, and hotels lost \$2 million to the flu from the ordinances, while saloons lost \$350,000.³⁸ These ordinances turned out to be fairly pointless: even in places that strictly adhered to the recommendations of the Surgeon General the case and death rates were no lower than those in lenient cities.³⁹ On a smaller scale, tobacco sales dropped off about 50 percent in places that strictly required cotton face masks because men could not smoke while wearing masks.⁴⁰ These masks turned out to be completely ineffective, because the weave of the gauze proved too porous to stop a virus, usually a tiny sphere with a diameter of about 1/10,000 of a millimeter.⁴¹ The futile public health ordinances and gauze masks temporarily damaged business during the flu crisis, yet the economy rebounded.

When contagious diseases attack a society, it tends to hit the poorest sector of economy the hardest. One of the reasons for this is that they are more prone to infect people who have cramped

living quarters, poor hygiene, inadequate water and food supplies, and exposure to parasites—some of the consequences of poverty.⁴² Because the working class would be disproportionately affected by disease, the work force would be disproportionately affected by disease, the work force would be disproportionately diminished in the lowest-paying, most essential jobs during an epidemic. By contrast, the Spanish Flu, being an air-borne disease (and thus not preventable through good hygiene and health), affected all sectors of the economy equally. It killed vast numbers of people, but, as noted by historian Alfred W. Crosby, it “ignored the differences between rural and urban, patrician and peasant, capitalist and proletarian, and struck them all down in similar proportions.”⁴³ Because it was so unbiased in its selection, no social hierarchies were overturned, nor were any particular divisions of employment gutted of laborers. Influenza’s only prejudice was that it ravaged the young, healthy age-range—something fairly irrelevant to economic status—and thus the only long-term economic imbalance was proportional: there were fewer people to work and fewer people sharing in the wealth.

Although the Spanish Flu killed a lower percentage of the population than it affected and lasted for a shorter period of time, the economic benefits of the epidemic can be compared to those of the Black Death. One of the peculiar positive effects of the Black Death, according to historian Norman Davies, was that it marked “the decisive point in the decline of the feudal system in Western Europe.”⁴⁴ Although social upheaval may have already been gaining momentum, the deadly epidemic that killed approximately one-third of Europe allowed formerly impoverished and powerless serfs to assert their independence.⁴⁵ With an absence of competition in the work force and a high demand for menial labor, serfs were able to gain comparative economic freedom with rising pay.⁴⁶ This escalation of the price of labor and goods during the plague is echoed in the aftermath of the Spanish Flu epidemic. *The Review of Economic Statistics* of December 1919 observes the post-influenza wage inflation, noting that the “efficiency of labor, unfortunately, has not materially improved and is still generally below the pre-war level,” yet “rates of wages have remained high during 1919 and have continued to rise rather than decline.”⁴⁷ *The Review* also remarks on the oddity that “unemployment has not developed, in spite of the demobilization of the army; and in many sections labor is still reported to be scarce.”⁴⁸ The unusually high wages and low labor supply despite the re-absorption of troops into the work force could be attributed to the fact that so many people had succumbed to the pandemic on the home front that the re-entry of troops had normalized, rather than overwhelmed, the labor market.

In the years following 1918, the influenza pandemic, though surely seared in the memories of those it personally affected, quickly subsided from national consciousness.⁴⁹ Even during the epidemic, the flu was rarely mentioned in the papers or truly noticed on a national level. As noted by Crosby, “*The Reader’s Guide to Periodical Literature*, 1919-1921 has 13 inches of column space devoted to citations of articles about baseball, 20 inches to Bolshevism, 47 to Prohibition, and 8 inches to the flu.”⁵⁰ As the United States emerged victorious from the devastations of World War I, the brief but deadly nightmare of the Spanish Flu was lost to the national memory. The war had put pressure on Americans to sacrifice as much as possible: the government urging people to grow what food they could, eat less meat and fewer luxury foods, buy war bonds, and serve in the army as required by the draft. Wartime America was dealing with death on a regular basis as the war casualties continued to grow, ultimately reaching approximately 117,000 deaths—about 53,000 in battle, the remainder due to disease.⁵¹ With such a high proportion of war losses due to disease and the influenza deaths accompanying the hardships on the home front, the flu must have seemed so intricately enmeshed in the reality of war that it became unremarkable.

After the war had ended and the flu had essentially run its course in most places, the thrifty attitudes about consumption enforced by the war effort and the strict public health ordinances were immediately discarded. Americans had a brief attention span for such restrictions—they were only heeded during the war for patriotic reasons or in the midst of a deadly, dramatic pandemic. *The Review of Economic Statistics* of December 1919 remarked that “extravagant expenditure, both public and private, is found on every hand.”⁵² San Franciscans—who endured the worst hit of the Spanish Flu on the West Coast—had complied with the October-November 1918 masking ordinance that had required gauze masks be worn at all times.⁵³ Yet, a mid-December masking recommendation of that same year met the fierce opposition of 90 percent of the city and was struck down by the San Francisco Board of Supervisors.⁵⁴ The intolerance for what were thought at the time to be potentially life-saving health measures reflects the prevalent mood at the time of impatience with inconvenience that trumped even fear of death.

Perhaps the Spanish Flu would have drawn more attention if only it had left the scar of a long depression in its wake. Yet, after the crippling 10 months of the flu, the American economy was not only

undamaged, but booming. Following the “year of readjustment” of 1919, the United States experienced a sunny era of unprecedented prosperity.⁵⁵ The national income, which had remained stagnant from 1890 to 1918, rose more than \$200 per capita and laborers enjoyed a workday diminished from 12 to eight hours, as well as a paid annual vacation.⁵⁶ With the advent of mass-production due to the innovations of the assembly line and expanded industrial exploitation of electricity, productivity soared to unheard-of levels.⁵⁷ In the mere 30 years between 1899 and 1929, industrial production expanded by 264 percent.⁵⁸ All of this was accomplished by a manufacturing labor pool that, according to historian William E. Leuchtenburg in his book *The Perils of Prosperity*, contained “precisely the same number of men in 1929 as it had in 1919.”⁵⁹ The workforce to attain these new heights was the same workforce that been described in 1919 as generally sufficient, yet which was in many sectors “still reported to be scarce.”⁶⁰ In the same way that the Renaissance thrived in the wake of the Black Plague by benefiting from capital redistribution to a greater demographic, the destruction of the Spanish Flu had opened up a decade of culture and materialism to a population that benefited from the resulting availability of jobs and higher wages.

With thousands of the fittest soldiers, doctors, and nurses overseas and the stress of coping with wartime and its strict economic regulations, a flu epidemic was the last thing that Americans of 1918 needed, or expected. It was especially traumatic when even the enormous strides that had been made in recent years in the medical community were insufficient to control this epidemic of a traditionally unobtrusive disease. Disturbingly, young, healthy adults were the most likely to succumb to the virus and die of a violent, delirious pneumonia. With the backbone of the economy debilitated and inept medical care, U.S. society could have collapsed. However, the flu lasted for a short enough time that it did not permanently disable the workforce. Also, because the primary target was an age-group rather than a class, the virus infected different socioeconomic sectors evenly. As a consequence, though in many places the workforce was reduced to the point of near-collapse, the population retained its socioeconomic balance. Finally, because the flu took place for 10 months during and after World War I, the most devastated demographic was replaced by the return of soldiers who could then be reabsorbed easily into society, thereby alleviating the labor-pool crisis. From the perspective of its victims and their loved ones, the 1918 influenza was a tragedy; however, viewed within an economic paradigm, the Spanish Lady smoothed the transition from the turbulence of the 19th and early 20th centuries into the prosperity of the 1920s.

Endnotes

¹ Friedrich Nietzsche *Twilight of the Idols, or, How to Philosophize with a Hammer* (Oxford: Oxford University Press, 1988) p. 5, http://books.google.com/books?id=oh4q25gwKogC&pg=PR3&dq=twilight+of+the+idols&sig=6sr5p PhV2ST 4tHWj_CbRqJ-5Ty4#PPA5,M1

² Alfred W. Crosby. *America’s Forgotten Pandemic: The Influenza of 1918* 2nd ed. (Cambridge: Cambridge University Press, 2003) p. 10; *The American Experience: Influenza 1918*, Program Transcript, PBS, <http://www.pbs.org/wgbh/amex/influenza/filmmore/transcript/transcript1.html>

³ Crosby, p. 3

⁴ *Ibid.*, pp. 206, 207

⁵ Sverren-Erik Mamelund, “Can the Spanish Influenza Pandemic of 1918 Explain the Baby Boom of 1920 in Neutral Norway? Population English Edition, 2002) Vol 59, No. 2 (March-April, 2004) p. 232, <http://links.jstor.org/sici?sici=1634-2941%28200403%2F04%2959%3A2%3C229%3ACTSIPO %3E2.0.CO%3B2-Z>

⁶ John M. Barry, *Great Influenza: The Epic Story of the Deadliest Plague in History* (New York: Penguin Group, 2004) p. 238

⁷ *Ibid.*, p. 238

⁸ Tim Appenzeller, “Tracking the Next Killer Flu,” *National Geographic* (October 2005) p. 12

⁹ *Ibid.*, p. 12

¹⁰ It is generally thought that the Spanish flu got its name because Spain, being a neutral country in the World War I, did not censor its newspapers, so the mortality rates were exposed to the world. It is certain that the flu did not originate in Spain, though it is not certain where it did originate. Most experts agree that it probably began in America. *Ibid.*, p. 12

¹¹ Gina Kolata, *Flu: The Story of the Great Influenza Pandemic of 1918 and the Search for the Virus That Caused It* (New York: Farrar, Straus and Giroux, 1999) p. 7

¹² Barry, p. 243

¹³ Mary Ellen Snodgrass, *World Epidemics: A Cultural Chronology of Disease from Prehistory to the Era of SARS* (Jefferson, North Carolina: McFarland & Company, Incorporated, 2003) p. 272

¹⁴ *Ibid.*, p. 272

¹⁵ Crosby, p. 19

¹⁶ The flu was not made a reportable disease in many cities until the second wave of the epidemic was already in full swing because the medical community was reluctant to accept that influenza had reached such proportions. This partially accounts for the incomplete civilian records concerning the flu, in contrast to the records of controlled populations, like the military and prisons, which kept strict medical records of any and all diseases in the community. Kolata, *Flu*, p. 10

¹⁷ Crosby, pp. 17, 18

¹⁸ Gina Kolata, “Why winter for the flu? A virus has its reasons; [4 edition],” *International Herald Tribune* (December 6, 2007) p. 5 <http://proquest.umi.com/pqdweb?index=1&did=1393874091&SrchMode=1&sid=2&Fmt=3&VInst=PROD&VType=PQD&RQT=309&VName=PQD&TS=1197252984&clientId=14764>

¹⁹ *Ibid.*, p. 4

²⁰ *The American Experience: Influenza 1918, Maps*, PBS, <http://www.pbs.org/wgbh/amex/influenza/maps/index.htm>

²¹ Crosby, p. 21

²² Laura B. Shrestha, “CRS Report for Congress: Life Expectancy in the United States,” (Domestic Social Policy Division, 2006) p. 31, <http://www.ncseonline.org/NLE/CRSreports/06Sep/RL32792.pdf>

²³ Kolata, *Flu*, pp. 6, 7

²⁴ Crosby, p. 312

²⁵ *Ibid.*, p. 312

²⁶ *Ibid.*, p. 75

²⁷ *Ibid.*, p. 75

²⁸ *Ibid.*, p. 75

²⁹ *Ibid.*, p. 76

³⁰ *Ibid.*, p. 76

³¹ Joseph S. Davis, “Economic Conditions Since the Armistice,” *The Review of Economic Statistics* Vol 1, Monthly Supplement (December 1919) p. 9, <http://links.jstor.org/sici?sici=00346535%28191912%291%3C9%3A%3A%3E2.0.CO%3B2-0>

³² *Ibid.*, p. 9

³³ Snodgrass, p. 276

³⁴ *Ibid.*, p. 276

³⁵ Barry, pp. 142, 143

³⁶ Ibid., p. 143

³⁷ Crosby, p. 74

³⁸ Ibid., p. 87

³⁹ Ibid., p. 74

⁴⁰ Ibid., p. 104

⁴¹ Barry, pp. 359, 103

⁴² Kolata, Flu, p. 47

⁴³ Crosby, p. 323

⁴⁴ Norman Davies, *Europe: A History* (New York: Oxford University Press, 1996) p. 412

⁴⁵ Ibid., p. 412

⁴⁶ Ibid., p. 412

⁴⁷ Ibid., p. 412; Davis, p. 10

⁴⁸ Davis, p. 10

⁴⁹ Crosby, p. 314

⁵⁰ Ibid., p. 314

⁵¹ The Great War: Resources, WWI Casualty and Death Tables, PBS, http://www.pbs.org/greatwar/resources/casdeath_pop.html

⁵² Davis, p. 9

⁵³ Crosby, pp. 70, 108-110

⁵⁴ Ibid., pp. 70, 108-110

⁵⁵ Davis, p. 10; William E. Leuchtenburg, *The Perils of Prosperity: 1914-32* (Chicago: The University of Chicago Press, 1958) p. 178

⁵⁶ Leuchtenburg, pp. 178-179

⁵⁷ Ibid., p. 179

⁵⁸ Ibid., p. 180

⁵⁹ Ibid., p. 179

⁶⁰ Davis, p. 10

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Annotation

The writer of this piece

- **introduces a topic.**
 - *More people died of the Spanish Flu in the 10 months that it devastated the world than had died of any other disease or war in history. . . . Yet, due to some historical and demographic particulars of the 1918 flu, the American economy—which nearly collapsed in some areas during the outbreak—was not crippled in any lasting way.*
- **organizes complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole.**
 - The information is organized logically (and, in places, chronologically). The introduction previews the content and then moves through several carefully sequenced categories of information, ending with a conclusion that summarizes the main points of the explanation.
- **develops the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.**
 - *Details: In only one century, it had seen the successful vaccination, containment, or cure for the notorious menaces of smallpox, anthrax, rabies, meningitis, typhoid, malaria, yellow fever, diphtheria, cholera, and tetanus.² . . . The war had put pressure on Americans to sacrifice as much as possible: the government urging people to grow what food they could, eat less meat and fewer luxury foods, buy war bonds, and serve in the army as required by the draft.*
 - *Examples: It mutates so frequently that humans are never fully immune to it . . . The killer flu of 1918, dubbed the Spanish Flu or the Spanish Lady, was a particularly deadly mutation of this influenza virus.¹⁰*
 - *Facts: Following the “year of readjustment” of 1919, the United States experienced a sunny era of unprecedented prosperity.⁵⁵ The national income, which had remained stagnant from 1890 to 1918, rose more than \$200 per capita and laborers enjoyed a workday diminished from 12 to eight hours, as well as a paid annual vacation. ⁵⁶*
 - *Quotations: As noted by Crosby, “The Reader’s Guide to Periodical Literature, 1919-1921 has 13 inches of column space devoted to citations of articles about baseball, 20 inches to Bolshevism, 47 to Prohibition, and 8 inches to the flu.”⁵⁰ . . . All of this was accomplished by a manufacturing labor pool that, according to historian William E. Leuchtenburg in his book *The Perils of Prosperity*, contained “precisely the same number of men in 1929 as it had in 1919.”⁵⁹*
- **uses appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.**
 - *Because neither antibiotics nor a way to control the spread of air-borne diseases . . . had been invented yet . . . Yet, due to . . . Instead, it . . . In reality . . . As of the next day . . . In total . . . Even though . . . So . . . As expected . . . However . . . From there . . . Although at times slow . . . Whether or not . . . In the most severe stages . . . As morgues filled up . . . In some situations . . . By contrast . . . But . . . Because it was so unbiased in its selection . . . This escalation . . . In the years following 1918 . . . As the United States emerged . . . After the war had ended . . . Yet . . . From the perspective of . . .*
 - *. . . there was sparse evidence that civilians were similarly affected, and, besides, disease was a fact of life in any military camp.¹⁶ So, little attention was directed to the budding pandemic . . . With an absence of competition in the work force and a high demand for menial labor, serfs were able to gain comparative economic freedom with rising pay.⁴⁶*
- **uses precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.**
 - *. . . bacteriology . . . diphtheria . . . sanitation . . . suffragette movement . . . pandemic . . . virulent disease . . . influenza viruses . . .*

- . . . as a killer . . . As a pesky annual virus, slightly more troublesome than the common cold . . . if only it had left the scar of a long depression . . . budding pandemic . . . In the same way that the Renaissance thrived in the wake of the Black Plague . . .
- **establishes and maintains a formal style and objective tone while attending to the norms and conventions of the discipline in which the student is writing.**
 - . . . there was sparse evidence that civilians were similarly affected, and, besides, disease was a fact of life in any military camp.¹⁶ So, little attention was directed to the budding pandemic . . . With an absence of competition in the work force and a high demand for menial labor, serfs were able to gain comparative economic freedom with rising pay.⁴⁵
 - When contagious diseases attack a society, it tends to hit the poorest sector of the economy the hardest. . . . By contrast, the Spanish Flu, being an air-borne disease (and thus not preventable through good hygiene and health) affected all sectors of the economy equally.
- **provides a concluding section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).**
 - From the perspective of its victims and their loved ones, the 1918 influenza was a tragedy; however, viewed within an economic paradigm, the Spanish Flu smoothed the transition from the turbulence of the 19th and early 20th centuries into the prosperity of the 1920s.
- **demonstrates good command of the conventions of standard written English.**

Student Sample: Grade 12, Informative/Explanatory

This essay was one of a portfolio of four essays submitted by a high school student for placement in a college composition course sequence. The student had unlimited time to write and likely received feedback and instructional support while creating the portfolio.

Fact vs. Fiction and All the Grey Space in Between

The modern world is full of problems and issues—disagreements between peoples that stem from today’s wide array of perceptions, ideas, and values. Issues that could never have been foreseen are often identified and made known today because of technology. Once, there were scatterings of people who had the same idea, yet never took any action because none knew of the others; now, given our complex forms of modern communication, there are millions who have been connected. Today, when a new and arguable idea surfaces, the debate spreads across the global community like wildfire. Topics that the general public might never have become aware of are instantly made into news that can be discussed at the evening dinner table. One such matter, which has sparked the curiosity of millions, is the recent interest in the classification of literature as fiction or nonfiction.

A number of questions have arisen: What sparked the booming interest? Where exactly is the line that separates fiction from nonfiction, and how far can the line be stretched until one becomes the other? Are there intermediaries between the two, or must we classify each piece of literature as one or the other? Do authors do this purposefully, or with no intent? The answers to these questions are often circular and simply lead to further dispute. In modern times, the line between the classification of literature as either fiction or nonfiction has become blurred and unclear; the outdated definitions and qualifications have sparked the development of new genres and challenged the world’s idea on the differences between the two.

The Spark Which Lit the Fire

Though it had been a fairly relevant and known topic to members of the literary world, the idea that a book is not always completely fiction or nonfiction seemed to be an obscure and unnecessary subject for the public to ponder. However, the average Monday morning watercooler conversation was forever changed when what has become known as the “Million Little Lies Scandal” broke out in early 2006. It started on October 26, 2005 when author James Frey appeared on *The Oprah Winfrey Show*. He was the only guest of the day, there to promote and discuss his book entitled *A Million Little Pieces*. The book, a nonfiction memoir, recounts Frey’s experience as an alcoholic, drug addict, and criminal, and the heroic story of his overcoming of every obstacle in his path to getting clean. After his appearance on the show and addition into Oprah’s highly esteemed and publicized book club, the novel skyrocketed to the top of the charts, eventually becoming a number one best seller. But his success was short lived; in the months that followed, *The Smoking Gun*, a Web site that posts legal documents, arrest records, and investigates celebrity police dealings, unearthed some discrepancies between Frey’s story and the police documents that should have supported his claims.

Though the Web site had originally only been searching for Frey’s mugshot, one small inconsistency soon led to another, and after a six-week investigation, the site released its findings. Investigators had taken any parts of Frey’s story that could be verified by a police record, matched it with his actual records, and were shocked by what they found; nearly all of Frey’s memoir was either highly embellished or flat out fabricated. Huge discrepancies between the truth and what was stated in Frey’s book became headline news; instances like Frey claiming to be in jail for eighty-seven days when in reality he was incarcerated for a mere four hours, or the serious drug charges that he claimed were filed against him that were never found on any record.

Frey was caught, and on January 8, 2006, *The Smoking Gun* published an article called “A Million Little Lies,” which took an in-depth look at every provable inconsistency in the novel. By comparing direct quotes from the book to police records—or rather, the lack of police records—Frey’s entire novel was pieced apart until there was nothing remaining. Completely discredited, yet still somehow maintaining the entire situation was a misunderstanding, Frey attempted to salvage his namesake by reappearing on *Oprah*; in the end, this proved to be more damaging than helpful. He had his reasons for what he’d done, he tried to explain.

Reasons that were valid and legitimate according to him, as he stated that he would not have been able to get the book signed unless he was willing to sell it as nonfiction. Details had been slightly exaggerated, he conceded, but this was only to allow the novel to fluctuate and flow in a way that would not have been possible had he stuck to the bare facts.

Regardless, in the end, it was proved beyond anyone's reasonable doubt that James Frey's novel landed dead center in the proverbial grey area between black and white—his novel was partially fiction and partially nonfiction. And so started the media frenzy; the scandal covered newsstands for weeks, people took sides with either Frey or his critics, and similarly themed novels were called into question. Suddenly the world *cared* about a novel's validity; they no longer assumed that the words fiction and nonfiction could themselves define the amount of fact that stood behind a piece of literature. People also realized, simultaneously, that they might not exactly know what defined and separated fiction and nonfiction, or if, in more modern times, the two might mesh together a bit more than in the literature of old.

With Difficulty, the Line is Drawn

Fiction and nonfiction: they're two words that are surprisingly hard to define. It's difficult to ascertain what the words have meant in the past, what they each encompass today, and how past and present definitions have been molded and shaped by the literature of the time. Traditionally, fiction is 'a tale drawn from the imagination' and nonfiction is 'a statement of fact'; however, the two are so much more complex than that. For many, the word 'fiction' is associable with the word 'story,' as if the two are equal or interchangeable. Subgenres of fiction often contribute to this perception; novels, short stories, fairy tales, comics, films, animation, and even video games help the mind classify fiction as a substance completely fabricated in the mind. Fiction is largely assumed to be a form of art or entertainment, and in many cases this is true—science fiction and romance novels are two examples of how we are entertained by a good book. But frequently, stories are told to educate—to raise awareness regarding a certain topic about which the author is concerned.

Stories like Cormac McCarthy's *The Road*, George Orwell's *1984*, and Ayn Rand's *Anthem* all warn us about terrible futures that may arise as the result of the choices of humanity. Uzodinma Iweala's *Beasts of No Nation* is a short work of fiction based entirely around fact; while it tells the tale of a fictional little African boy thrown into a bloody civil uprising, his story of being a recruited child soldier is happening to hundreds of similar boys to this very day. Fables and parables are other, more subliminal examples of educational, moral-based fiction.

In the same way, nonfiction is surrounded by many presumptions; people assume that anything read in a nonfiction book is true, otherwise the literature would be labeled as fiction. Nonfiction literature *is* factual literature, but there is one important note to make. Nonfiction is literature that is *presented* as fact. This presentation may be accurate or inaccurate; in other words, the author is presumed to be writing what he or she believes to be the truth, or what he or she has been led to believe is the truth. Examples of nonfiction include essays, documentaries, scientific papers, textbooks, and journals. Nonfiction differs from fiction, however, in the areas regarding how the literature is presented and used. Directness, simplicity, and clarity are all aims of nonfiction literature.

Providing straight, accessible, understandable information to the reader is the purpose of nonfiction, and the ability to communicate well to the audience is what defines a skilled writer of the field. And despite the truth behind nonfiction writing, it is often necessary to persuade the reader to agree with the ideas being presented; therefore, a balanced, coherent and informed argument is also vital.

More Than Simply Black or White

The line between fiction and nonfiction starts to blur, however, when one considers genres that seem to mesh the two; historical fiction, new journalism, and biographies/autobiographies. These are only three of the defined new genres encompassed by what has become the intermediary between fiction and nonfiction— literary nonfiction. When one explores these three genres, it becomes blaringly obvious how easily fiction and nonfiction can blur into one.

Historical fiction is the product when an author takes real people and real events and tells the story of what actually happened to them, but inserts characters of their own creation and a plot line that they invent in order to tie the entire novel together. This idea is perfectly exemplified in Ann Rinaldi's *An Acquaintance with Darkness*. This novel takes real historical aspects (the assassination of President

Lincoln; the trial of the only woman associated with his murder; the society of Washington, D.C., at the time of his death; the history behind the practice of grave robbing) and inserts the character of a young girl and her dying mother who, between the two of them, manage to tell the historical side of the story along with their own imagined one. All the pieces of history are told completely as they happened; so on some level, this novel *is* nonfiction. Yet it is also blatantly fiction—it has *characters*.

New journalism, biographies, and autobiographies, however, blur the lines in a slightly different way; they call into question people’s ability to relay information truthfully and with no bias. New journalism is the term coined in the 1960s to describe the then unconventional journalism techniques that brought the reader inside the life and mind of the story. It’s a practice very common today; just watch any network investigation series. The journalist attempts to get inside the mind of whomever is being investigated; he or she digs up information regarding that person’s past, present, and potential future. The author then takes all the factual background information they’ve collected and pairs it with the emotions, memories, and feelings described to them by the person, and writes the complete story. If the complete work is to be published as a book rather than a news article or made into a television script, it often ends up being sold as a fiction novel. Yet is this the correct classification, given that all the information is true?

One excellent example of new journalism is Truman Capote’s *In Cold Blood*. When asked about it, Capote himself even called it “unclassifiable.” Capote traveled to Kansas to investigate the murder of a family of four; he ended up staying there for years, befriending the people of the town, discovering what he could about the murders from them, and piecing together his book from interviews and information he gained during his stay. When it was published, the novel became a best seller and also one of the first highly noted pieces of literature to border the line between fiction and nonfiction; it was the first of its kind to bring the idea of the blurring line to households across the United States.

Biographies and autobiographies are often questioned in the same way. Though not always thought of as controversial and previously considered nonfiction, biographies and autobiographies don’t appear to fit into today’s definition of fiction or nonfiction. The authors of both are simply telling the story of their own life or of someone else’s life, but that begs an obvious question; is a highly detailed, written record of a person’s feelings and perceptions able to be considered nonfiction? How can we classify people’s emotions and memories as fact? An outstanding example of an autobiographical piece that cannot be defined is Tim O’Brien’s *The Things They Carried*. His self-proclaimed ‘nonfiction novel’ is a collection of stories stemming from both his imagination and his personal experience in Vietnam during the war. O’Brien feels that the idea of creating a story that is technically false yet truthfully portrays a situation—as opposed to just stating the facts and stirring no emotion within the reader—is the correct way to educate the public in a meaningful, everlasting way. He, like many others, believes that biographies and autobiographies should be left as their own separate being; a genre where the reader may classify for himself or herself what truth and what fiction might lie within the literature. All of the issues mentioned above are shrouded in debate; there are no straightforward answers.

Fiction and nonfiction are two polar opposites on a scale that today offers little to no gradient. In years past, these two words have been definition enough and have managed to encompass all types of written word. Times change, however, and in the modern day, authors have begun to push the boundaries and discover the furthest extent of where literature can take us. Since they feel as if their literature does not fit into the classifications of fiction or nonfiction, authors are creating *new* genres where their novels and books can be properly sorted and defined. An update is long overdue—both an update to the definitions currently used to classify books, and an update in which we create new areas into which books can be classified.

Annotation

The writer of this piece

- **introduces a topic.**
 - *In modern times, the line between the classification of literature as either fiction or nonfiction has become blurred and unclear; the outdated definitions and qualifications have sparked the development of new genres and challenged the world’s idea on the differences between the two.*

- **organizes complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole, and includes formatting when useful to aiding comprehension.**
 - The writer uses headers to help organize sections and uses cohesion devices to link sentences (*The Spark Which Lit the Fire; With Difficulty, the Line is Drawn; More Than Simply Black or White*).
 - *However, the average Monday morning watercooler conversation was forever changed when what has become known as the “Million Little Lies Scandal” broke out in early 2006.*
 - *Regardless, in the end, it was proved beyond anyone’s reasonable doubt that James Frey’s novel landed dead center in the proverbial grey area between black and white—his novel was partially fiction and partially nonfiction.*
 - *Fiction and nonfiction: they’re two words that are surprisingly hard to define. It’s difficult to ascertain what the words have meant in the past, what they each encompass today, and how past and present definitions have been molded and shaped by the literature of the time.*
 - *Fiction and nonfiction are two polar opposites on a scale that today offers little to no gradient.*
- **develops the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.**
 - *Frey was caught, and on January 8, 2006, The Smoking Gun published an article called “A Million Little Lies,” which took an in-depth look at every provable inconsistency in the novel. By comparing direct quotes from the book to police records—or rather, the lack of police records—Frey’s entire novel was pieced apart until there was nothing remaining.*
 - *Stories like Cormac McCarthy’s *The Road*, George Orwell’s *1984*, and Ayn Rand’s *Anthem* all warn us about terrible futures that may arise as the result of the choices of humanity.*
- **uses appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.**
 - *. . . the debate spreads across the global community like wildfire.*
 - *Where exactly is the line that separates fiction from nonfiction, and how far can the line be stretched until one becomes the other? Are there intermediaries between the two, or must we classify each piece of literature as one or the other?*
 - *All the pieces of history are told completely as they happened; so on some level, this novel is nonfiction. Yet it is also blatantly fiction—it has characters.*
- **uses precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.**
 - *Uzodinma Iweala’s *Beasts of No Nation* is a short work of fiction based entirely around fact . . .*
 - *The line between fiction and nonfiction starts to blur, however, when one considers genres that seem to mesh the two; historical fiction, new journalism, and biographies/ autobiographies.*
- **establishes and maintains a formal style and objective tone while attending to the norms and conventions of the specific discipline in which the student is writing.**
 - *One such matter . . .*
 - *Though it had been a fairly relevant and known topic to members of the literary world, the idea that a book is not always completely fiction or nonfiction seemed to be an obscure and unnecessary subject for the public to ponder.*
 - *Historical fiction is the product when . . .*

- provides a concluding section that follows from and supports the information or explanation explanation presented (e.g., articulating implications or the significance of the topic).
 - *Since they feel as if their literature does not fit into the classifications of fiction or nonfiction, authors are creating new genres where their novels and books can be properly sorted and defined.*
- demonstrates good command of the conventions of standard written English (with occasional errors that do not interfere materially with the underlying message).

Student Sample: Grade 12, Informative/Explanatory

The essay that follows was one of a portfolio of four essays submitted by a high school student for placement in a college composition course sequence. The student had unlimited time to write and likely received feedback and instructional support while creating the portfolio.

The Making of a Human Voice and How to Use It

The violin is arguably the most cherished and well-known orchestral instrument in the world. Many are moved by its unique quality of sound; it is known as the only instrument close to the sound of a human voice. Maybe the violin is so revered because “humans in all times and places are powerfully moved, or threatened, by the possibility that with our hands and minds we can create something that is perfect” (Ebert). But the sound of this instrument was not magically created overnight; the creation of the very first violin took many years and has been a product of much experimentation. This is the reason that every beginning violinist should learn to appreciate the art of making a violin and the process of holding and bowing his instrument so that he will have the knowledge to play it well.

The process of constructing a violin is an age-old tradition that has been developed and refined for centuries. Each step is crucial to the quality of the instrument’s sound. The violin’s body consists of a rib structure, which is made from six thin maple ribs that are bent to shape by applying dry heat. The ribs are reinforced at the joints by wood blocks that are located in each of the four outward curving corners, one at the top rib, and one at the lower rib. To reinforce the glue-joints between the ribs and the table and back of the violin, strips of willow or pine are glued along the inside edges of the ribs to create the lining. The back plate of the violin is made from either one or two matched pieces of maple. The wood chosen for these pieces is very important and affects the sound production of the violin. The outline of the plate is drawn onto the maple and sawn out, and the arching (the outward bulge) is then painstakingly carved to a thickness of about five millimeters. The front plate of the violin, or table, has two soundholes carved from it on either side of the bridge. These soundholes are [shaped like the letter f] and are made to project the sound. Purfling is done by inlaying thin strips of wood around the top and back of the violin a short distance from the rim. Purfling strengthens the delicate edgework and produces a beautiful frame around the instrument’s outline (Gusset).

The bridge is cut from a thin sliver of maple. Intricate shapes are carved from it, known as the “heart,” “ears,” and the two “feet” that allow it to stand on the violin table. The bridge is placed directly between the small nicks cut in the middle of each [soundhole]. The top of the bridge is curved to conform to the arch of the violin table, which allows the player to play each string individually (Skinner). The bridge is held onto the instrument by as much as seventeen pounds of pressure exerted from the four strings, which makes it a very delicate piece that must be checked periodically for leaning or warping. A bass-bar is fitted to the underside of the table underneath the left foot of the bridge. Underneath the right foot of the bridge, a soundpost is wedged between the front and back panel. The soundpost is made of spruce or pine and resists the downward pressure of the strings and improves the sound.

A neck is fitted to the top rib and is made to hold the fingerboard above the table. The fingerboard is a piece of ebony that extends beyond the neck and gradually widens towards the bridge. At the top of the neck is a pegbox that has holes drilled into each side in which the pegs are held. The pegs are used for a wide range of tuning. The pegbox slopes slightly backwards, which tensions the strings across the ebony nut at the top of the fingerboard and keeps them raised above the fingerboard. At the top of the pegbox is a scroll, added during the baroque period as an artistic flourish to provide an aesthetic touch to its already pleasing appearance (Vienna Online Magazine). The strings are wrapped around the pegs, stretched across the bridge, and held by an ebony or boxwood tailpiece. Anywhere from one to four fine tuners can be attached to the tailpiece; these are used to tighten or loosen the string to change its pitch for fine-tuning. The tailpiece is held into place by a loop of gut or nylon that is wrapped around an ebony end button located in the middle of the bottom rib.

After gluing is done, the violin must be exposed to air and sun for several days to a few weeks to darken the wood through the process of oxidation (Gusset). A protective varnish is brushed onto the surface of the violin, which has a slight dampening effect to the sound, but it is primarily used to protect the wood from perspiration, dust, dirt, and humidity (Kolneder 21). “The classical Italian makers appear to have used different formulations for the ground coat, which seals and protects the wood and does much to bring out its natural beauty, and the top coats, which were tinted with rich red, yellow and golden-brown

colours . . . Recent research suggests that walnut or linseed oil may have been an important constituent of the finest old Italian varnish, later supplanted by recipes based on shellac and alcohol” (Stowell 5).

Both the construction of the violin and the way it is played are equally important to its sound production. This is very critical to learn early so that a bad habit does not need correcting later on. The modern violin is held between the chin and the left shoulder, with the scroll angling towards the left. Violin teachers will have varying ideas of the correct position to hold a violin, but many great violinists have held their instruments in different ways and have been successful. Some will hold a violin directly under the chin, and others believe that the highest position on the shoulder is best. A chinrest is usually attached to the left side of the tailpiece to make it more comfortable for the violinist to hold. Sometimes a shoulder rest can be attached to the back of the violin which can be taken off after playing. The shoulder rest can be made of various materials and provides height and padding to the violinist’s shoulder.

The left hand gently moves along the neck and fingerboard of the violin. The left fingers press down upon the string, shortening its length, which creates a higher pitch. The right hand holds the bow, which consists of a long stick of wood and a gathering of horsehair stretched from one end of the bow to the other. “In the bowing area, two C-shaped indentations (the waist) accommodate the bow’s motion across the strings” (Kolneder 13). The four strings can be bowed with the horsehair, plucked, or bounced with the stick of the bow to produce vastly different colors of sound. “Bowling across the string is the normal manner of tone production, but the process is actually extremely complicated and in its most minute details not yet entirely understood . . . The strings’ basic pitch depends on its length, thickness, material . . . and tension. These factors determine the frequency, that is, the number of vibrations . . . per second” (Kolneder 16). The bow must be rosined frequently to allow the strings to vibrate to create the fullest sound.

Even if a luthier, or stringed instrument maker, takes years to complete a violin, it can only produce its best sound if every step of its construction and every piece is made with is of the best quality. The same is true of the time needed for a musician to play the violin well. A player must learn that what counts is not how much time is spent practicing, but the quality of practice. A private teacher is also required, so proper instruction will be given. A musician must also fully understand and appreciate the skill required for constructing a violin. Not until then will a violinist be able to use his knowledge to bring forth their instrument’s fullest and most beautiful sound.

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Annotation

The writer of this piece

- **introduces a topic.**
 - *The violin is arguably the most cherished and well-known orchestral instrument in the world. Many are moved by its unique quality of sound; it is known as the only instrument*

close to the sound of a human voice. . . . the sound of this instrument was not magically created overnight; the creation of the very first violin took many years and has been a product of much experimentation. This is the reason that every beginning violinist should learn to appreciate the art of making a violin and the process of holding and bowing his instrument so that he will have the knowledge to play it well.

- **organizes complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole.**
 - The information is sequenced logically. The writer provides a carefully sequenced explanation of how a violin is made through detailed descriptions of the various parts of a violin and their purposes and steps in the process of building a violin.
- **develops the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience’s knowledge of the topic.**
 - Facts: . . . *the creation of the very first violin took many years and has been a product of much experimentation.*
 - Examples: . . . *many great violinists have held their instruments in different ways and have been successful. Some will hold a violin directly under the chin, and others believe that the highest position on the shoulder is best.*
 - Details: *The four strings can be bowed with the horsehair, plucked, or bounced with the stick of the bow to produce vastly different colors of sound.*
 - Quotations: *“Bowing across the string is the normal manner of tone production, but the process is actually extremely complicated and in its most minute details not yet entirely understood . . . The strings’ basic pitch depends on its length, thickness, material . . . and tension. These factors determine the frequency, that is, the number of vibrations . . . per second” (Kolneder 16).*
- **integrates information into the text selectively to maintain the flow of ideas, avoiding plagiarism and overreliance on any one source and following a standard format for citation.**
 - *At the top of the pegbox is a scroll, added during the baroque period as an artistic flourish to provide an aesthetic touch to its already pleasing appearance (Vienna Online Magazine).*
 - *“The classical Italian makers appear to have used different formulations for the ground coat, which seals and protects the wood and does much to bring out its natural beauty, and the top coats, which were tinted with rich red, yellow and golden-brown colours . . . Recent research suggests that walnut or linseed oil may have been an important constituent of the finest old Italian varnish, later supplanted by recipes based on shellac and alcohol” (Stowell 5).*
 - *Stowell, Robin, ed. The Cambridge Companion to the Violin. New York: Press Syndicate of the University of Cambridge, 1992.*
- **uses appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.**
 - *But the sound of this instrument . . . This is the reason . . . To reinforce the glue joints . . .*
 - *These soundholes . . . The top of the bridge . . . Underneath the right foot . . . At the top of the pegbox . . . After gluing is done . . .*
 - *Both the construction of the violin and the way it is played are equally important to its sound production. This is very critical to learn early so that a bad habit does not need correcting later on. . . . Even if a luthier, or stringed instrument maker, takes years to complete a violin, it can only produce its best sound if every step of its construction and every piece is made with is of the best quality.*

- **uses precise language, domain-specific vocabulary, and techniques such as metaphor, simile, and analogy to manage the complexity of the topic.**
 - . . . a rib structure . . . glue-joints . . . back plate . . . soundholes . . . tuning . . .
 - . . . known as the only instrument close to the sound of a human voice . . .
 - *Purfling is done by inlaying thin strips of wood around the top and back of the violin a short distance from the rim. . . . a luthier, or stringed instrument maker . . .*
- **establishes and maintains a formal style and objective tone while attending to the norms and conventions of the discipline in which the student is writing.**
 - *The violin is arguably the most cherished and well-known orchestral instrument in the world. . . . A musician must also fully understand and appreciate the skill required for constructing a violin. Not until then will a violinist be able to use his knowledge to bring forth their instrument's fullest and most beautiful sound.*
- **provides a concluding section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).**
 - *Even if a luthier, or stringed instrument maker, takes years to complete a violin, it can only produce its best sound if every step of its construction and every piece is made with is of the best quality. The same is true of the time needed for a musician to play the violin well. A player must learn that what counts is not how much time is spent practicing, but the quality of practice. A private teacher is also required, so proper instruction will be given. A musician must also fully understand and appreciate the skill required for constructing a violin. Not until then will a violinist be able to use his knowledge to bring forth their instrument's fullest and most beautiful sound.*
- **demonstrates good command of the conventions of standard written English (with occasional errors that do not interfere materially with the underlying message).**

Student Sample: Grade 12, Informative/Explanatory

A high school senior wrote the essay that follows for a career and technical class. The student had unlimited time to research and write this paper.

Wood Joints

Have you ever wondered how to design complex wood joinery? The types of wood joinery have been around for thousands of years. There are only twelve different main types of joints but there are many that combine more than one for aesthetics or strength. The first step in designing joints is understanding the different types and what their uses are. After you understand the strengths and weaknesses of the different joints you can compare and contrast the joints for aesthetics. This and a lot of practice are what make excellent wood joinery.

The first step in designing joints is to figure out what way the wood will move so it won't destroy the joint. Then figure in the stresses that will be put on the joint. The three types of stresses on joints are compression, tension, and shear. Compression is the weight pushing down on another piece and making it crush down. Tension is things being pulled apart. Shear is when a piece breaks off when overloaded.

There are two categories of joints there are sawed joints and shaped joints. A sawed joint is one that can be cut in one pass with a saw. The shaped joints can be complicated and take multiple cuts. Joints are either made to lock together which are the shaped ones or to make glue surfaces to glue together which are the sawed ones. The twelve types of joints are the butt joints, miter joints, rebate joints, dado joints, groove joints, and lap joints are sawed joints. Scarf joints, finger joints, dovetails, mortise and tenon, dowel joints, and spline joints are shaped joints.

To lay out good joints there are a few tools necessary. You need a good square that is accurate, a steel ruler for measuring, a miter square, a sliding bevel, a protractor, and a caliper. The square is to draw perfect ninety-degree lines. The miter square is so you can check your miters for accuracy. The sliding bevel and protractor is to draw angles other than forty-five degrees. The caliper is to make sure the pieces getting joined are the right thickness.

For a good joint the fit should be tight. But if it is too tight it is not good because the wood joint could crack or break. It should be tight enough that you can either push it together or give it a light tap with a hammer to seat it. Another reason it can't be too tight is because when the glue is applied the wood will expand. Then it may not fit. The reason the wood expands is because putting the glue on is like putting water on it.

The way to make a tight joint is in the layout. A marking knife is a lot more accurate than a pencil. Also make sure you use the same ruler throughout the project because there could be slight variations in different ones. Always mark the waste side of the line and make sure you follow on the right side of the line. If you cut on the wrong side of the line it will not be tight enough.

Now that you know what tools to use the next thing in tight joinery is to make sure all the pieces are the same thickness or the thickness needed. Boards should be cut to a rough length so they are easier to run through the machines. This will leave less room for error because the pieces won't be so bulky. Also make sure that the plywood is the thickness it's claimed to be because it could be off 1/64 of an inch. Whenever possible trace the mate for the joint to ensure a good fit.

If the joint is cut too small there are four different repairs. You can fill small gaps with a mixture of sawdust of the same species of wood and glue. For loose parts you can add shims and sand or file to fit. You could also make a design feature for loose parts. A slot cut in the end of a loose tenon with a wedge put in it makes a nice design feature. But if it is real noticeable you should just replace it. When buying lumber, always make sure you buy a couple of extra boards for mistakes or defects you didn't notice when you bought it.

Out of the twelve different joints, I'll start with the ones easiest to make. Butt joints are the easiest joints to make. A butt joint is wood joined face to edge or edge to end. There are several ways to attach the two pieces. They can be nailed or screwed together but should have a pilot hole drilled or the pieces may split. Corrugated or metal fasteners can be used. Also you can make wooden triangles or blocks to

strengthen up corners. The pieces can also be doweled together, which is one of the stronger ways to attach the two pieces. The two pieces can also be biscuit jointed together which is another fairly strong way to attach them.

Another fairly simple joint is the lap joint. The lap joint is where the two pieces of wood to be joined are cut so only half the thickness of each piece is left. They are then glued, nailed, or screwed together. The lap joint is mostly used for frames that will have plywood on them. The joint is also used in latticework, which is used for decoration in different pieces of furniture. The downside to this joint is that it isn't very strong but it does look nice in some applications.

The next joint is a little more complicated but still fairly simple. The only thing complicated about the miter joint is figuring out the angles for different shapes. A square is simple but you have to make sure the saw is exactly square or the joints won't fit tight. But as you get into different sided shapes the angles are harder to figure out, especially if they have to be a compound miter. That is where it is cut on an angle in two different directions. The miter joint looks good because there is no end grain but it isn't very strong. But biscuits can be added for some extra strength.

The next joint is the dado joint. Dados are slots cut across the grain. They are cut using a dado blade in the table saw, on a router, or hand chiseled. The uses of a dado are for putting shelves in the sideboards of a bookcase or other piece of furniture. The dado can be stopped short of the edge of the board to form a stopped dado. This is useful when you don't want the joint to be seen.

A joint similar to the dado is a groove. A groove runs with the grain instead of against it. There are several ways to cut a groove. You can use a dado blade, router, molder, or shaper. A groove is usually used in making raised panels. It is what holds the pane in between the rails and stiles.

A joint similar to a groove is the spline. The spline joint can either be a solid spline like tongue and groove. That is where one board has a groove and another one has a piece with both edges are cut off leaving the middle. A loose spline is a board with two grooves cut and then a piece of wood inserted in the two grooves and glued. The uses good for the spline is siding and paneling. It also works fairly well in making large panels because the tongue helps to keep the boards aligned. You can dress up the spline joint by putting a chamfer or bead on the edge of the boards.

A good joint for joining backs to furniture is the rebate joint. It also works well for joining the tops and bottoms of furniture. A rebate joint is a dado at the end or edge of a board and usually has a piece of wood in it the same thickness as the dado. The wood is usually nailed or screwed into place. Another version of the rebate joint is one that is stopped. The stopped rebates are used when you don't want the joint to show.

A joint that can be quite complicated is the scarf joint. The scarf joint is used to make two boards into a longer one. This joint is mostly used in timber frames. The joint came around in Europe when they had cut all the long big trees down and had to find a way to make the long beams needed for their buildings (Ramuz, 279). Then when the settlers came to America, they didn't need it for another hundred years or so until they did the same thing over here. The joint is usually about eight times longer than the width of the board or beam. It is made to have a lot of glue surface to make it a fairly strong joint. But it is not as strong as a full-length board or beam.

Another joint that can be quite complicated until you have the jig made for it is the finger joint. The finger joint is easy once the jig is made you just have to stand at the table saw and keep running the boards over the dado bade. The finger joint is several grooves on the end of a board with the other board cut to mate. They are very strong because it really increases the glue surface. The joint can also be used as a hinge if the corners are rounded and a dowel put all the way through the joint.

The last two joints left are some of the most complicated ones to design and cut. These joints are the real give away of quality joinery. If these joints are done properly they can last for hundreds of years and will really make your work look professional. The two joints are the mortise and tenon and dovetails. You can either cut these by hand or machine. If cut by machine, they aren't as complicated to make as they are when you cut them by hand. The joints aren't cut by hand as much anymore, but when they are you can take more pride in your work.

I will start with the mortise and tenon. The mortise and tenon has been around for hundreds and hundreds

of years. There are many uses including timber frame, attaching aprons to the legs on tables, and attaching rails and stiles on doorframes. Mortise and tenon are very strong joints. The timber frame barns and buildings are still standing after hundreds of years. The only reason they fall is because of decay and neglect. The mortise is a square hold cut to a certain depth and size. A through mortise is a square hole that is cut all the way through the board or beam. The tenon is the mate to a mortise. It is a square cut on the end of a board or beam. They are usually in the center of the board but can be offset if there is going to be more than one joint in the same spot. It also could be offset if it was going to be close to the edge of the other post or leg. A through tenon can look good with a wedge, or you can peg the tenon for strength. Mortises can be cut with a mortise, router, or drilled out and squared up with a chisel. Tenons can be cut by router, table saw, or by hand. But whatever way you do it they still mean good quality work.

The other hallmark of quality wood joinery is the dovetail. Dovetails can either be cut by a router and template or by hand with a lot of practice. A dovetail is similar to a finger joint except that it has angles. The dovetail has been around for thousands of years and there is a reason why. It is very aesthetically pleasing and strong enough to last for a very long time. Dovetails are very strong because it is made to pull apart in only one direction so from any other direction it can handle extreme loads.

Now to make dovetails by hand you need to take your time and be patient. They aren't as hard as you may think but does take practice. When the joint is completely cut it should fit together with a light push and should be very stiff. Dovetails are used in making drawer frames and the main box in cabinets. There are two types of dovetails and they are through dovetails and half-blind dovetails. Through dovetails are the ones where both boards go all the way through each other leaving the joint exposed. Half-blind dovetails are usually used to attach drawer fronts to the rest of the frame. On those, only half of the joint is visible because the other half ends short by 1/8 inch or more.

Now that you know the basics, here are a few more things you should know to make strong dovetails. If creating dovetails out of softwood, you should have a slope of 1 to 6 on the dovetails. If making them out of hardwood, the angle should be 1 to 8 (AM-wood.com). The reason for this is because softwood splits easier, this way the dovetail won't spread the wood as much when pulled on. If you are making multiple joints it is better to make a pattern so they are all the same. Plus it won't take as long because you won't have to lay them out every time. Dovetails are made up of two parts and they are pins and tails. It doesn't matter which ones you choose to cut first but you should always trace its mate to get a perfect fit.

That is all twelve woodworking joints. Now lets talk about beefing them up a little. Sure there are nails, screws, and other mechanical fasteners, but I'm talking about shop made ones. Dowels and biscuits are excellent ways to strengthen joints unnoticeably. But wedges, pegs, and wooden blocks are good ways and could even add some decoration. On through tenons, you can cut slots in the end of the tenon and add some wedges as a design and a way to keep it from pulling out. On mortise and tenons you can drill a hole and insert a peg for strength and looks.

To sum it all up there is a lot of information on the twelve different wood joints. Some of them can be quite complicated but with practice you could become an amateur woodworker. I have learned a lot about the different joints and techniques behind them. This research helped a lot in deciding what joints to use and how to construct them for my tech project. My tech project is designing and building a gun cabinet. In my gun cabinet I'm going to use rebates, grooves, dados, lock miters, dovetails, mortise and tenon and lap joints. I hope you have learned as much as I have about choosing and creating joints in wood. There is still more to be learned but this is a very good start in becoming a professional woodworker.

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Annotation

The writer of this piece

- **introduces a topic.**
 - *Have you ever wondered how to design complex wood joinery?*
- **organizes complex ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole.**
 - *The first step in designing joints is to figure out what way the wood will move so it won't destroy the joint.*
 - *There are two categories of joints . . .*
 - *To lay out good joints there are a few tools necessary.*
 - *The way to make a tight joint is in the layout . . .*
- **develops the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.**
 - *If the joint is cut too small, there are four different repairs. You can fill small gaps with a mixture of sawdust of the same species of wood and glue. For loose parts, you can add shims and sand or file to fit. You could also make a design feature for loose parts. A slot cut in the end of a loose tenon with a wedge put in it makes a nice design feature. But if it is real noticeable you should jut replace it.*
- **uses appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.**
 - *Out of the twelve different joints, I'll start with the ones easiest to make.*
 - *Another fairly simple joint is the lap joint.*
 - *A joint similar to a groove is the spline.*
 - *To sum it all up . . .*
- **uses precise language and domain-specific vocabulary to manage the complexity of the topic.**
 - *Dados are slots cut across the grain.*
 - *A groove runs with the grain instead of against it.*
 - *A rebate joint is a dado at the end or edge of a board and usually has a piece of wood in it the same thickness as the dado.*

- **establishes and maintains a formal style and objective tone while attending to the norms and conventions of the specific discipline in which the student is writing.**
 - *The other hallmark of quality wood joinery is the dovetail.*
 - *My tech project is designing and building a gun cabinet. In my gun cabinet I'm going to use rebates, grooves, dados, lock miters, dovetails, mortise and tenon and lap joints.*
- **provides a concluding section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).**
 - *To sum it all up . . . with practice you could become an amateur woodworker . . . There is still more to be learned but this is a very good start in becoming a professional woodworker.*
- **demonstrates good command of the conventions of standard written English (with occasional errors that do not interfere materially with the underlying message).**

Student Sample: Grade 12, Informative/Explanatory

A high school senior wrote the essay that follows for a career and technical class. The student had unlimited time to research and write this paper.

TIG/GTAW Welding

Welding is a highly demanded trade across the US. There are many types of welding such as wire feed, stick, TIG (Tungsten Inert Gas), and oxy acetylene welding. I will explain the most perfected and efficient welding process of them all, TIG welding. I will take you through shielding gases, tungsten materials, tungsten shapes and shaping, heat and warp age, welding flaws, and some recommendations to prevent welding flaws.

There are many purposes for shielding gases in the welding industry. In general, shielding gases are one of the many variables throughout the TIG welding processes. There are four types of gases and they all have their own characteristics. Shielding gases protect the molten metal and the tungsten from the impurities in the air during welding. Shielding gases also have an effect on the temperature the arc produces and the physical appearance of the weld bead. Flow rates in the TIG welding processes can also affect the shielding aspects of your weld.

The four types of shielding gases throughout the TIG welding processes are: argon (Ar), helium (He), hydrogen (H), and nitrogen (N). Any of those four gases can be mixed together.

Argon is a by-product of oxygen and nitrogen. Before it was produced on a huge scale, argon was a rare gas. Since argon is denser than air, argon can shield welds in deep grooves and tight places. But since argon is denser than air, when overhead welding is necessary, flow rates need to be increased because the argon will fall from the weld. Argon is fairly easy to ionize so it makes it convenient for AC (Alternating Current) welding.

Helium is a by-product of natural gas. Helium increases your weld penetration. Helium is great for welding aged aluminum and is also great for tube mills since helium allows you to weld at higher speeds. Helium is usually mixed with argon to help the shielding aspects since helium is lighter than air. Helium is not used with the AC since it doesn't have the cleaning aspects that argon has.

Hydrogen is not used so much as a shielding gas as much as an additive to other shielding gases. Hydrogen is used when weld penetration and speed is needed. Hydrogen is not used when welding stainless steel since hydrogen is the number one cause of porosity and cracking in mild and stainless steel.

Similar to hydrogen, nitrogen is used as an additive to argon. It also can cause porosity in some ferritic steels. Ferritic steels are defined as a group of stainless steels with a chromium content range of 12-18%. Such steels do not respond well to heat treatment or temperment.

Nitrogen is used to increase penetration when welding copper alloys. Nitrogen is also a stabilizer when welding alloys. When it comes to shielding gases it makes a big difference in your welds. There are many characteristics to consider when you weld different materials.

Tungsten is a base material the electrode is made of. The electrode is the part of the welding torch that transfers the electrical arc to the weld material. Tungsten materials are another huge variable when it comes to TIG welding. Tungsten materials can affect your weld in similar ways as shielding gases. There are many characteristics of each material and depending upon what you are welding you may have to make some choices. Each tungsten is labeled by a color to make choosing easier.

There are five common types of tungstens including: pure tungsten (green), 1 % thorium (yellow) and 2 % thorium (red), 1/4to 1/2 % zirconium (brown), 2 % cerium (orange), 1 % lanthanum (black).

Pure tungsten has limited use for AC welding, and has the poorest heat resistance and electron flow, since there is no other material mixed with pure tungsten, it doesn't have any of these characteristics including electron flow rates or heat resistance. Pure tungsten is mostly used for aluminum and magnesium.

Thoriated tungsten improves current flow, but to maintain an arc with thoriated tungsten requires more voltage. Thorium increases service life of the tungsten and makes arc starting easier. Thoriated tungstens do not work well with AC welding since it is hard to maintain a ball end shape, which is required for AC welding.

Zirconium tungstens help emit electrons more freely and can be used with AC and DC (Direct Current) welding processes, unlike thoriated tungstens. Unlike thoriated tungstens zirconium tungstens are not radioactive. So they have less contamination aspects than thoriated tungstens.

Cerium tungstens have many of the same characteristics as thoriated tungstens, they were actually made to replace thoriated tungstens since they are not radioactive, which makes them safer. Lithium tungstens are also non-radioactive like cerium. They are similar to thoriated tungstens, except they have a higher arc voltage.

Tungsten shaping and heat penetration are directly related to each other. When you change the thickness of the materials you are welding, you need to maybe consider changing shielding gases or tungsten types but you also need to think about the shape on the end of the tungsten especially since it changes weld penetration.

There are three basic shapes to choose from You can modify each as you learn more about all the variables you can choose from The three basic shapes are: pointed end, rounded end, and tapered with ball end (FIGURE 1).

There are special ways to grind and shape your tungstens. When you grind your tungsten, you need to make sure you use a grinding wheel that you have never grinded with before. If you use a used grinding wheel, the tungsten may become contaminated, and eventually contaminate the metal you are welding. You also need to make sure when you grind a point on your tungsten, to grind the tungsten parallel to the grinding wheel. Grinding your tungsten parallel to the grinding wheel allows electrons to flow easier, and prevents further contamination to the tungsten. You need to make sure when grinding a pointed end tungsten that the length of the tapered part of the tungsten is twice as long as the diameter of the tungsten. Tungsten shape and shaping is another large element of TIG welding that needs to be considered to make your welds most efficient.

(figure not reprinted here)

Heat is the main reason for warpage in the welding industry. Warpage needs to be considered when welding since the shape of the material will change after applying heat. There are different ways metals warp depending on where the heat is applied and how much heat is applied. Many professional welders know through experience how much a project will warp with different settings on the welder. They can also predict and correct warpage before it happens. Warpage can also depend on tungsten shape, tungsten material, amperage, shielding gases, weld angles and weld distances. There are also different ways metal warps depending on the weld joint.

(figure not reprinted here)

As shown in FIGURE 2, once the heat from the welding process is applied to the objects, the two arrows show which way the metal is warped. The two dots represent the weld. There are many different ways metal can warp and this shows just an idea of how the weld warps the metal.

There are many TIG welding flaws you can run into when you are not fully experienced. These flaws must be looked at, especially when people's lives depend on it, such as in constructing bridges and buildings.

Many common welding failures are caused by welding flaws such as porosity, inclusions, inadequate penetration, and cracks, just to name a few. All of these problems can cause your weld to be weaker than you intended.

Porosity is caused when gases are dissolved in the weld, forming air bubbles in and on the weld. The result of porosity is caused by improper shielding gases or pressure settings. The shielding gases are what protect the molten metal when welding and eliminates porosity.

Inclusions are when non-metallic metals such as slag enters the molten metal. This can be caused by multiple weld starts. It can be fixed by welding one continuous bead.

Inadequate penetration can weaken the weld severely along with inclusions and porosity. When you don't get the right amount of penetration you don't allow the full amount of materials to fuse together. The main cause of improper penetration are a misdirected arc and not enough amperage. Simply, the weld bead is too small for the job.

Cracks are another flaw that can have drastic effects. Cracks are caused during the solidifying stages of welding. When the metals drastically drop temperature, the weld materials are vulnerable to cracking. Slowing your weld speed is one of the main corrections to cracking. When welding it is most important to ask questions if you need to since someone's life could depend on it.

TIG welding processes can weld many more materials than wire feed of stick welding. TIG welding processes are capable of welding many types of materials such as: copper, aluminum, mild and low carbon steels, stainless steel, and magnesium. This is what makes TIG welding so different than any other welding process. You can weld so many different materials. This is where TIG welding becomes the most perfected welding process in the welding industry. The TIG welding process can weld the most materials of all the welding processes.

Some recommendations will help you perform better welds, these fall into categories like welding angles, arc distance control, tungsten types, and shielding gas considerations. TIG welding can be a lot to take in when it comes to an essay, but if you can remember different recommendations such as these you will increase your abilities to weld with a TIG welder. The first recommendation is to consider all your variables throughout the whole process, ask questions when needed and take your time. Speed will eventually come as time goes on. To clear up how the TIG welding process works check out the illustration below.

(illustration from online source not reprinted here)

Now that you know about some recommendations on how to improve your weld abilities, I will explain how to protect yourself during welding. Safety is a huge deal when it comes to welding in general. You need the proper protective equipment to make your job or experience as safe as it can be. You need to protect your eyes, skin, and lungs. You need a proper welding helmet to protect your eyes and face from the bright arc and spatter. You will also need thick gloves and a long sleeve cotton shirt to protect your skin from burning from the bright light. You should leave no skin uncovered or unprotected. Burns can lead to blindness and skin cancer. You should also have pants and steel toe boots to protect against further burns or falling objects. A respirator should be used when welding specific metals to protect your respiratory system from cancer and other damage.

Learning about TIG welding has been a very helpful experience for me since it will help me in my college career, and in my job after school. I am going to be a certified welder. This learning experience has helped me greatly. TIG welding is something that needs to be learned not only by textbook or paper but also by hands on learning. And thankfully, I have gotten that experience to weld hands on. It makes learning so much easier

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Annotation

The writer of this piece

- **introduces a topic.**
 - *There are many types of welding . . . I will explain . . . I will take you through . . .*
- **organizes ideas, concepts, and information so that each new element builds on that which precedes it to create a unified whole; includes graphics when useful to aiding comprehension.**
 - *I will explain the most perfected and efficient welding process of them all, TIG welding. I will take you through shielding gases, tungsten materials, tungsten shapes and shaping, heat and warp age, welding flaws, and some recommendations to prevent welding flaws.*
 - *There are many purposes for shielding gases in the welding industry.*
 - *The four types of shielding gases throughout the TIG welding process are: argon (Ar) . . .*
 - *Argon is a by-product of oxygen and nitrogen.*
- **develops the topic thoroughly by selecting the most significant and relevant facts, extended definitions, concrete details, quotations, or other information and examples appropriate to the audience's knowledge of the topic.**
 - *Hydrogen is not used so much as a shielding gas as much as an additive to other shielding gases. Hydrogen is used when weld penetration and speed is needed. Hydrogen is not used when welding stainless steel since hydrogen is the number one cause of porosity and cracking in mild and stainless steel.*
 - *If you use a used grinding wheel, the tungsten may become contaminated, and eventually contaminate the metal you are welding.*
 - *When welding it is most important to ask questions if you need to since someone's life could depend on it.*
- **uses appropriate and varied transitions and syntax to link the major sections of the text, create cohesion, and clarify the relationships among complex ideas and concepts.**
 - *There are special ways to grind and shape your tungstens. When you grind your tungsten, you need to make sure . . .*
 - *As shown in FIGURE 2, once the heat from the welding process is applied to the objects . . .*
 - *Inadequate penetration can weaken the weld severely along with inclusions and porosity. . . Cracks are another flaw that can have drastic effects.*
- **uses precise language and domain-specific vocabulary to manage the complexity of the topic.**
 - *Similar to hydrogen, nitrogen is used as an additive to argon. It also can cause porosity in some ferritic steels. Ferritic steels are defined as a group of stainless steels with a chromium content range of 12-180.*
 - *Zirconium tungstens help emit electrons more freely and can be used with AC and DC (Direct Current) welding processes, unlike thoriated tungstens.*
- **establishes and maintains a formal style and objective tone while attending to the norms and conventions of the discipline in which the student is writing.**
 - *Now that you know about some recommendations on how to improve your weld abilities, I will explain how to protect yourself during welding.*
 - *Learning about TIG welding has been a very helpful experience for me since it will help me in my college career, and in my job after school. I am going to be a certified welder.*
- **provides a concluding section that follows from and supports the information or explanation presented (e.g., articulating implications or the significance of the topic).**
 - *Learning about TIG welding has been a very helpful experience . . . I am going to be a certified welder. . . TIG welding is something that needs to be learned not only by*

textbook or paper but also by hands on learning. And thankfully, I have gotten that experience to weld hands on. It makes learning so much easier.

- **demonstrates good command of the conventions of standard written English (with occasional errors that do not interfere materially with the underlying message).**