

INFORMATIONAL TEXT:

Writing Arguments in Response to Nonfiction

CCSS.ELA-LITERACY.RI.9-10.1-2,6-9 | CCSS.ELA-LITERACY.W.9-10.1,4,9 | TEKS 110.31.B.(8),(9),(10),(13),(16)

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Objectives:

- Introduce students to the concept of logical arguments
- Teach students the differences between a logical argument and an emotional appeal
- Help students develop an organized response to a piece of nonfiction
- Teach students to present evidence within a written response

Time:

1 class period

Materials:

Each student needs his or her own copy of:

- Handout 1 Einstein's Letter to Franklin Delano Roosevelt-1939
- Handout 2 Annihilation Bomb Friend or Foe?-1945
- Handout 3 Einstein's Television Remarks to Eleanor Roosevelt-1950

Procedure:

1. Introduce students to the concept of a logical argument

Many pieces of writing are designed to convince the reader of an author's point of view on a topic. There are a number of methods that an author might use to attempt to convince readers that what is being said is correct. The three most common are:

Appeal to authority—Cite authoritative sources that agree with your viewpoint or establish yourself as an expert. Appeals to emotion—Make the reader feel by evoking an emotional response to the issue.

Logical arguments—Developing a convincing argument based on concrete facts and logical conclusions.

While all three methods are used in effective and convincing arguments, the third is the most important. Appealing to authority is only relevant if the reader trusts the authority and appeals to emotion only work if the proper emotion is successfully evoked. A logical argument, however, is based on the facts, of the matter. It's the most objective method—focusing on proof and reason, rather than on emotion and trust. Because of this, it's the foundation on which all good persuasive writing must stand. If an argument isn't logically sound, the writer can't layer a persuasive appeal to authority or emotion on top of it.

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2. Ask your students to read the following three handouts:

- Handout 1 Einstein's Letter to Franklin Delano Roosevelt-1939
- Handout 2 Annihilation Bomb Friend or Foe?—1945
- Handout 3 Einstein's Television Remarks to Eleanor Roosevelt—1950

3. Discuss the three handouts.

In class, discuss each of the three handouts, looking at the following:

What is the topic of this article?What is the author's point of view?What facts does the author present to support the claim put forth?What is the purpose of the article?Is the argument valid?

4. Ask your students to formulate an opinion on this topic:

"Should the US have invested in research into nuclear weapons in the 1940s?"

Their opinions will be used later to write the thesis statement for an essay they will write for homework.

Using their opinions and based on the articles that they've read, ask them to develop a thesis.

A thesis is the central statement of purpose for an essay or article. Do not allow the students to simply rephrase the topic in a positive or negative form, such as, "The US should not have invested in research into nuclear weapons in the 1940s." A good thesis is neither pure fact nor an opinion, but a combination of the two that the author can develop over the course of the essay, such as "Research into nuclear weapons in the 1940s saved many American lives in WWII."

5. Introduce your students to the concept of "Fact" versus "Opinion."

Not every detail in an article is objectively true (a fact). Many elements are the opinions of the author. While the author's opinions can be very important, they're not universally, or objectively true. A fact is a statement about something concrete that can't be denied logically.

Fact: The largest tree in the world is a giant sequoia called, "General Sherman."

Opinion: The prettiest tree in the world is a Southern live oak called the "Angel Oak."

When students are crafting a logical argument, it's important to rely on facts to justify their claims, as they can't be refuted by a reader.

6. Have your students identify five details from the articles that they can use in developing their thesis statement.

Using the handouts, ask your students to underline five details in the three articles that could be used to help support their thesis.

Ask your students to identify whether these details from the articles are facts or opinions by writing "Fact" over each detail that is a fact, and "Opinion" over any that is an opinion.

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7. Ask your students to underline five details from the handouts that don't support their thesis that they can refute in their essay. Have them follow the same procedure in identifying fact and opinion as they did in step 6.

8. As homework, have your students write a four paragraph essay in response to the following prompt.

Should the US have invested in research into nuclear weapons in the 1940s?

In the first paragraph, your students should state their thesis and introduce their argument.

In the second paragraph, your students should cite their supporting evidence to justify their thesis. The students should use the details identified in step 6, as well as any other relevant information that they have.

In the third paragraph, the students should refute potential issues with their thesis. They may use their notes from step 7 or other sources.

The final paragraph should wrap up their argument and provide a conclusion that restates the thesis.



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Handout #1 – Einstein's Letter to Franklin Delano Roosevelt (1939)

SIR:

Some RECENT WORK BY E. Fermi and L. Szilard, which has been communicated to me in manuscript, leads me to expect that the element uranium may be turned into a new and important source of energy in the immediate future. Certain aspects of the situation which has arisen seem to call for watchfulness and, if necessary, quick action on the part of the administration. I believe therefore that it is my duty to bring to your attention the following facts and recommendations:

In the course of the last four months it has been made probable—through the work of Joliot in France as well as Fermi and Szilard in America—that it may become possible to set up a nuclear chain reaction in a large mass of uranium, by which vast amounts of power and large quantities of new radium-like elements would be generated. Now it appears almost certain that this could be achieved in the immediate future.

This new phenomenon would also lead to the construction of bombs, and it is conceivable—though much less certain—that extremely powerful bombs of a new type may thus be constructed. A single bomb of this type, carried by boat and exploded in a port, might very well destroy the whole port together with some of the surrounding territory. However, such bombs might very well prove to be too heavy for transportation by air.

The United States has only very poor ores of uranium in moderate quantities. There is some good ore in Canada and the former Czechoslovakia, while the most important source of Uranium is Belgian Congo.

In view of this situation you may think it desirable to have some permanent contact maintained between the Administration and the group of physicists working on chain reactions in America. One possible way of achieving this might be for you to entrust with this task a person who has your confidence and who could perhaps serve in an unofficial capacity. His task might comprise the following:

a) To approach Government Departments, keep them informed of the further development, and out for-

ward recommendations for Government action, giving particular attention to the problem of uranium ore for the United States;

 b) To speed up the experimental work, which is at present being carried on within the limits of the budgets of University laboratories, by providing funds, if such funds be required, through his contacts with private persons who are willing

to make a contribution for this cause, and perhaps also by obtaining the co-operation of industrial laboratories which have the necessary equipment.

I understand that Germany has actually stopped the sale of uranium from the Czechoslovakian mines, which she has taken over. That she should have taken such early action might perhaps be understood on the ground that the son of the German Under-Secretary of State, Von Weishlicker [sic], is attached to the Kaiser Wilheim Institute in Berlin where some of the American work on uranium is now being repeated.



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Handout #2 – Annihilation Bomb—Friend or Foe?

A Statement by the Editors of Popular Science Monthly

A cubic inch of a star known to astronomers as the White Dwarf weighs about a ton, almost 6,000 times as much as a cubic inch of lead. This star may have pointed the way to atomic power-a discovery so momentous that the noted French physicist, the Duc de Broglie, calls it comparable only to primitive man's discovery of fire.

How could matter be as compressed as it is in the White Dwarf? One possibility that occurred to scientists was that this star consisted of atomic nuclei from which electrons had escaped. The supposedly indivisible atoms, in other words, appeared to have been broken apart elsewhere in the universe.

On August 6, 1945, an atomic explosion occurred within an annihilation bomb dropped on Hiroshima. Popular Science Monthly has looked forward to such a scientific triumph for many years; its editors are confident now that this dis-

covery will create many more opportunities-not only for warriors, but also for physicists, chemists, astronomers, engineers, and all other men interested in the physical sciences.

Dr. Albert Einstein suggested many years ago that "E equals M times C squared." By this he meant that the energy in a unit of mass could be computed by multiplying the mass by the velocity of light squared. Such computation

spurred scientists throughout the world to find a way to release the atom's tremendous energy.

A way has now been found. Even the biggest and the mightiest bombs developed previously could only hurl about familiar kinds of matter; the new atomic bomb is capable of changing minute quantities of matter into more

> concentrated energy than can be obtained by any of the world's mightiest machines.

> Nine million pounds of ammonium nitrate exploded near Oppau, Germany, in 1921, causing serious damage four miles away. That was the greatest weight of man-made material ever known to have exploded at one time. The exploding charge in the annihilation bomb weighed only a few pounds, but its effects were so devastating that it almost wiped out a city spread over nearly seven square miles.

> Even so, Oppau and Hiroshima are scarcely comparable. In the kind of explosion that occurred at Oppau, materials

such as steel have been torn into fragments, twisted and strewn over the countryside; at Hiroshima, steel appears to have been turned into gases.

You have seen corn popping in a pan. If the pan is removed from the fire the instant the first grain explodes, no more will explode. If you could see an atomic explosion, you might see something similar, but the units would go on bursting, each one setting off more explosions.

The mushroom cloud of the atomic

bombing of the Japanese city of Nagasaki

on August 9, 1945 rose 11 miles above the

bomb's hypocenter.



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"No one knows how to halt disintegration of matter," Dr. Jean Thibaud of the University of Paris said only four years ago—but the world did not disintegrate when the atomic bomb burst on Hiroshima. Hence, it is clear that ways have been found to release predetermined amounts of atomic energy.

Conceivably, the subjection of some materials to an intensely hot atomic explosion may make them radioactive. How long this radioactivity continues depends on the nature of the material and the force to which it is subjected.

Radiations are known to affect living matter. Radium and X rays, for example, have been used in treating cancer. Hence, some of the biophysical effects of atomic explosions may be beneficial. But others may be gruesome. Persons far enough from an atomic explosion to escape instant death may be fatally injured internally; res-

cue workers hastening to the scene may also be injured, unless ways are found to decontaminate such areas. *Popular Science Monthly's* editors are confident, nevertheless, that scientists can learn to control this new source of power as they have controlled fire and electricity.

"We have been able to harness this tremendous energy in a small bomb," says Sir John Anderson, who supervised British atomic-bomb research as Chancellor of the Exchequer under Prime Minister Churchill. "That is for war. The first thing now is for the scientists to discover how it can be harnessed for the beneficial purposes of peace. That will be a long job."

As recently as June 1940, authorities estimated that it would take more than 191 years to make a single gram of concentrated uranium 238, the source of energy reported

> to have been used in the production of the annihilation bomb. How much has been produced is still a top secret, but this can be said: Much more than 191 years' work has been done in five years.

> The combined efforts of the leaders in many scientific fields, from many nations, and facilities of many great American industries have made the employment of atomic energy to shorten this war possible. Those same efforts and facilities can contribute much more to the world.

> "A door has been opened in the world of science, and what may be on the oth-

er side is still to be seen," says Sir John Anderson. *Popular Science Monthly* hopes to describe that scene to its readers as rapidly as developments make this possible. Its editors hope, too, that readers of this magazine will be stimulated to contribute to the new era of science that dawned on August 6, 1945. By splitting the atom, man may have united the world.



Chancellor of the Exchequer under Prime

Minister Churchill.

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Handout #3 – Einstein's Television Remarks to Eleanor Roosevelt (1950)

AM GRATEFUL TO YOU FOR THE OPPORTUNITY to express my conviction in this most important political question. The idea of achieving security through national armament is, at the present state of military technique, a disastrous illusion. On the part of the United States this illusion has been particularly fostered by the fact that this country succeeded first in producing an atomic bomb. The belief seemed to prevail that in the end it were possible to achieve decisive military superiority.

In this way, any potential opponent would be intimidated, and security, so ardently desired by all of us, brought to us and all of humanity. The maxim which we have been following during these last five years has been, in short: security through superior military power, whatever the cost.

The armament race between the U.S.A. and U.S.S.R., originally supposed to be a preventive measure, assumes hysterical character. On both sides, the means to mass destruction are perfected with feverish haste—behind the respective walls of secrecy. The H-bomb appears on the public horizon as a probably attainable goal.

If successful, radioactive poisoning of the atmosphere and hence annihilation of any life on earth has been brought within the range of technical possibilities. The ghostlike character of this development lies in its apparently compulsory trend. Every step appears as the unavoidable consequence of the preceding one. In the end, it beckons more and more clearly general annihilation. Is there any way out of this impasse created by man himself? All of us, and particularly those who are responsible for the attitude of the U.S. and the U.S.S.R., should realized that we may have vanquished an external enemy, but have been incapable of getting rid of the mentality created by the war.

It is impossible to achieve peace as long as every single action is taken with a possible future conflict in view. The leading point of view of all political action should therefore

> be: What can we do to bring about a peaceful co-existence and even loyal cooperation of the nations?

The first problem is to do away with mutual fear and distrust. Solemn renunciation of violence (not only with respect to means of mass destruction) is undoubtedly necessary.

Such renunciation, however, can only be effective if at the same time a supra-national judicial and executive body is set up empowered to

decide questions of immediate concern to the security of the nations. Even a declaration of the nations to collaborate loyally in the realization of such a "restricted world government" would considerably reduce the imminent danger of war.

In the last analysis, every kind of peaceful cooperation among men is primarily based on mutual trust and only secondly on institutions such as courts of justice and police. This holds for nations as well as for individuals. And the basis of trust is loyal give and take.

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Standards

Common Core Standards - Reading: Informational Texts

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