

Nuclear Controversy: Sourcebook For An Inquiry Curriculum

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This article contains excerpts from the guide *Nuclear Controversy: Sourcebook for an Inquiry Curriculum*, compiled and written by Alan Shapiro for Educators for Social Responsibility Metropolitan Area. The guide is designed to help teachers and students examine controversial nuclear issues, come to reasoned conclusions about them, and determine what actions, if any, they wish to take as concerned citizens. The guide is divided into four parts: Part I offers an overview for the teacher on "Teaching Controversial Issues in Secondary School." Part II provides a summary of background information on nuclear weapons issues. It includes "A Nuclear Weapons Primer" and describes briefly four basic issues related to the future of nuclear weapons: deterrence policy, proliferation, missile defense, and abolition. Part III consists of source material - official U.S. policy statements, statements by non-governmental groups, congressional testimony, newspaper articles and excerpts from books - presenting divergent points of view on each issue. Part IV, "Teaching Strategies," includes suggestions for studying and inquiring into basic nuclear issues, specific lesson proposals, ideas for student involvement as citizens, and sample examination questions. The guide is primarily intended for high school teachers of history and social studies and their students, but portions of it might be useful to middle and junior high school teachers and students. It contains enough material for a four-to-six week unit of study. Teachers who have only a week or possibly a few days to spend on it might, depending upon student backgrounds of understanding, begin with "Nuclear Weapons Primer" and then devote a session or two to competing views on one of the four issues.

NUCLEAR CONTROVERSY: Sourcebook for an Inquiry Curriculum is available from Educators for Social Responsibility Metropolitan Area, 475 Riverside Drive, #554, New York, NY 10115. For information call (212) 870-3318 x38.

After the end of the cold war, public concern about a nuclear war died down. The Soviet Union no longer existed. Friendly relations developed between Russia and the United States. Both countries reduced their nuclear stockpiles, and they were even eliminated in several new states that had been part of the Soviet Union. But the nuclear threat was not eliminated. Today thousands of nuclear tipped missiles can be fired at a moment's notice. Most of these weapons are in the United States and Russia, but many others are in at least six other countries: Britain, France, China, India, Pakistan, and Israel.

The cold war U.S. deterrence policy remains essentially unchanged. Its cornerstone is the threat to use nuclear weapons against any perceived threat, and it continues to rely on its nuclear weapons delivery triad of Inter-Continental Ballistic Missiles (ICBMs), Sea-Launched Ballistic Missiles (SLBMs), and long range bombers. It maintains launch-on-warning and first-use policies. U.S. plans for even a limited missile defense system have generated a host of issues, among them the possible violation of the ABM Treaty with Russia and possible additions to the stockpile of Chinese nuclear weapons. Such developments have once again raised questions about the future of nuclear weapons. Should they continue to play such a large role in the military plans of the U.S., Russia, and other nations? Is the abolition of nuclear weapons possible?

Warfare in the 20th century has been revolutionized by two developments, huge leaps in the power of explosives and in the speeds and distances explosives can travel. Nuclear weapons, such as the atomic bombs that destroyed Hiroshima and, a few days later, Nagasaki, Japan are different from ordinary or conventional bombs which produce a shock wave after they explode, and only people in the immediate vicinity of the blast are likely to be wounded or killed. But a nuclear bomb produces many destructive effects and over a much wider area. In addition, nuclear bombs today are far more powerful than those of 1945. The Hiroshima bomb had an explosive yield of twelve and a half kilotons or 12,500 tons of TNT.

A medium-sized nuclear bomb today of one megaton, or one million tons of TNT, can produce the following effects in an airburst over a city:

1. Kill unprotected human beings in an area of some six square miles with "initial nuclear radiation";
2. Generate an electromagnetic pulse that knocks out electrical equipment over a wide area;

3. Create a thermal pulse - a wave of blinding light and intense heat - that causes second degree burns in exposed human beings nine and a half miles from the center of the explosion;
4. Send out a blast wave in all directions that flattens or severely damages all but the strongest buildings within a radius of four and a half miles;
5. Return to the earth radioactive fallout, most of it in the form of ash, if the bomb has been set off close enough to the earth or on it so that dust and debris are thrown up into the atmosphere and expose people to various fatal radiation illnesses.

These local primary effects produce a number of secondary effects that can be even more harmful than the primary ones. For example, nuclear weapons generate mass fires that may kill more people than the original thermal pulse and blast wave. If many nuclear bombs were exploded around the world in a full-scale nuclear war, three global effects can occur:

- Worldwide fallout contaminating the whole surface of the earth;
- General cooling of the earth's surface resulting from the millions of tons of dust blocking the sun's rays;
- Partial destruction of the ozone layer that protects living creatures from radiation.

The detonation of a one-megaton bomb, which has eighty times the explosive power of the Hiroshima bomb, 8,500 feet over the Empire State Building in New York City would have such effects as the following:

1. Almost every building between Battery Park and 125th Street would be gutted or flattened.
2. People in the buildings would fall to the street with the debris of the buildings, and those in the street would be crushed by this avalanche of people and buildings.
3. People would be picked up and hurled away from the blast along with the rest of the debris.
4. As far away as ten miles from ground zero, pieces of glass and other sharp objects would be hurled about by the blast wave at lethal velocities.
5. Winds of up to 400 miles per hour would rake the city.
6. A growing fireball would broil the city below.
7. Anyone caught in the open within nine miles of ground zero would receive third-degree burns and would probably be killed while those closer to the explosion would be charred and killed instantly.
8. Fires would break out everywhere and before long coalesce into mass fires.
9. Like the victims of Hiroshima, but in much greater numbers, the people of New York City would be burned, battered, crushed, and irradiated in every conceivable way, and millions of them would die.
10. Since most hospitals would be destroyed, most doctors and nurses killed or injured, and most medical supplies gone, most survivors would die.

