

## **Lesson Title: Hiroshima and Nagasaki: The Human Toll**

**Grade Level: 10 - 11**

**Unit of Study: Contemporary American Society**

### **California Standards - History Social Science**

Grade 10 World History - 10.8.6

Students analyze the causes and consequences of World War II.

Discuss the human costs of the war, with particular attention to the civilian and military losses in Russia, Germany, Britain, the United States, China, and Japan.

Grade 11 U.S. History 11.7.7 and 11.9.3

11.7.7 Students analyze America's participation in World War II.

Discuss the decision to drop atomic bombs and the consequences of the decision (Hiroshima and Nagasaki)

### **California Standards - Language Arts**

**Grade 11 and 12**

*Writing - Research and Technology*

1.6 Develop presentations by using clear research questions and creative and critical research strategies (e.g., field studies, oral histories, interviews, experiments, electronic sources).

2.4 Write historical investigation reports:

- a. Use exposition, narration, description, argumentation, or some combination of rhetorical strategies to support the main proposition.
- b. Analyze several historical records of a single event, examining critical relationships between elements of the research topic.
- c. Explain the perceived reason or reasons for the similarities and differences in historical records with information derived from primary and secondary sources to support or enhance the presentation.
- d. Include information from all relevant perspectives and take into consideration the validity and reliability of sources.
- e. Include a formal bibliography.

2.0 Speaking Applications

2.2 Deliver oral reports on historical investigations.

2.4 Delivery multimedia presentations

### **Key Concepts:**

pivotal point in history   nuclear age   ethical/moral issues   human rights

### **Setting the Context:**

The traditional approach to teaching about the atomic bomb focuses on the development of the bomb and the controversy around the decision to drop the bombs on Japan. What is missing from our instructional coverage is a thorough, in-depth discussion of the consequences of nuclear warfare—the death/injuries and the total devastation to the cities caused by the bombs.

As the lead physician of the U.S. Atomic Bomb Medical Team assigned to Nagasaki, Dr. James Yamazaki has first-hand knowledge of this topic. To share his experience, Dr Yamazaki wrote, *Children of the Atomic Bomb: An American Physician's Memoir of Nagasaki, Hiroshima, and the Marshall Islands (1995)*. Senator Daniel Inouye of Hawaii commenting about his book noted: "Dr. Yamazaki's painfully concise observations of children affected by the atomic bombs at Hiroshima and Nagasaki force us to see what actually took place beneath the mushroom cloud." Dr. Yamazaki has made it his life mission to educate others about the horrors of nuclear weapons and to urge the public to actively work for nuclear disarmament.

It's been over 60 years since the atomic bombs were dropped. For students today even the most basic information maybe unfamiliar. Thus a presentation of basic historical facts serves as a beginning point. However the purpose of this lesson is to go beyond this recitation of history.

Wars do not just inflict military casualties. The cost in civilian lives is a necessary discussion. The bombings of Hiroshima and Nagasaki provides the vehicle for that discussion. Statistics provide one

dimension of the impact on civilian lives, however accurate numbers in both Hiroshima and Nagasaki has proven to be extremely difficult because of the extent of physical damage to the cities and the lost of documents. Rough estimates range from 90,000 to 120,000 dead for Hiroshima and 60,000 to 80,000 dead for Nagasaki.

The bombings of Hiroshima and Nagasaki introduced the world to the nuclear age and a new vocabulary. Just explaining terms such as thermal radiation, blast winds, fallout radiation, lethal radiation effects cannot convey the experiences of Hiroshima and Nagasaki survivors. What happened is so out of the realm of the average person’s knowledge.

Photographs of and drawings by victims serve as powerful communicators. In this instance the old adage “a picture is worth a thousand words” is very true. The Children of the Atomic Bomb website provides a sampling of these photographs and drawings. (The graphic nature of these visuals requires sensitivity and care in selection for use in the classroom – Preview is highly recommended for age appropriateness).

With the number of nuclear nations increasing, it is critical that students be aware of the consequences of utilizing large-scale nuclear weapons. This is the untold story that Dr. Yamazaki and The Children of the Atomic Bomb present to students.

**Expected Learning Outcomes:** Students will be able to:

- Relate the historical details of the bombings of Hiroshima and Nagasaki
- Describe the effects of the atomic bombs on humans and city buildings and infrastructure.
- Analyze the role geography played in the casualties experienced by Hiroshima and Nagasaki
- Identify the factors that increase the likelihood of destruction and death.
- Analyze information from various websites to describe the human cost of the use of the atomic bomb.

## PROCEDURE

### Guided Instruction

To introduce this lesson show a photograph of the mushroom cloud. Ask students to identify what the photograph shows. Ask students: Do you know where the first atomic bombs were dropped? Wait for answers. Confirm correct answers or write the names Hiroshima and Nagasaki. Add the following information: Hiroshima – First atomic bomb dropped on Aug. 6, 1945 Nagasaki 2<sup>nd</sup> atomic bomb dropped on Aug. 9, 1945. Create a blank chart similar to this:

	Hiroshima	Nagasaki
<b>Prewar population</b>		
<b>Atomic bomb deaths – injured</b>		
<b>ESTIMATED TOTAL CASUALTIES**</b> <b>**Numbers are difficult to ascertain because of the total destruction of cities infrastructures.</b>		

As you fill in the blanks, explain that with these two events ---over 60 years ago, the world entered a new age---the Nuclear Age. Hiroshima and Nagasaki are the only two cities to experience a nuclear weapon and the people of these cities have much to teach the rest of the world. (The other major exposure to radiation was at the Chernobyl nuclear power plant in Russia in 1986.)

#### Answers to chart:

Prewar population	Hiroshima - <i>255,000 to 300,000</i>	Nagasaki - <i>195,000</i>
Atomic bomb deaths - injured	Hiroshima - <i>66,000 dead 69,000 injured</i>	Nagasaki – <i>39,000 dead 25,000 injured</i>
Estimated Total Casualties**	Hiroshima - <i>135,000 casualties</i>	Nagasaki – <i>64,000 casualties</i>

The times that we now live necessitate that young people have a realistic picture of the nuclear threat under which the world now lives. Introduce Dr. Yamazaki's website: Children of the Atomic Bomb. If you are able to go on line, do so at this point in the lesson. On the home page, click on [Human Toll](#) on the left column. Explain that this section of the website focuses on the effects of the bombs on the civilian population of Hiroshima and Nagasaki.

Within this section are the following short readings.

- What Is Radiation?
- "Pika Don"
- Thermal Radiation
- One Mile from Ground Zero
- Thermal Radiation and Blast Winds
- What Does Radiation Do to Living Things?
- Lethal Radiation Effects
- Hiroshima and Nagasaki Death Toll
- Fallout Radiation Skin Burn
- Thyroid Injury to Children
- How Radiation Affects Pregnant Women and Children
- Leukemia in Children
- "Hibakusha": Those who Survived and How They Survived
- U.S. Citizens Killed and Erased from History
- Peace Ambassadors in an Unpeaceful World

**TEACHER NOTE:** Review all materials prior to the lesson. Some of the photographs and drawings may be disturbing to some students—grade level/maturity level considerations must always be borne in mind. Having said this, to understand the true nature of the nuclear warfare, students need the exposure this lesson offers.

If access to the website is not possible, download several sections – suggested: *Thermal Radiation and Blast Winds* or *"Hibakusha": Those who Survived and How They Survived* followed by *Thyroid Injury to Children*. Upon completion of the readings have students identify and describe the unique features of an atomic bomb that causes death and severe injuries. Discuss their findings.

Explain that in addition to the physical trauma caused by the atomic bomb, survivors suffer tremendous emotional trauma. Click on *Ground Zero 1945: Pictures by Atomic Bomb Survivors* to introduce students to memories held by the survivors. Note the ages of the survivors at the time of the bombing, comment on the topics of the drawings.

**Assessment:** Based on their exploration of the issue, have students

1. Write a letter to a "hibakusha"

**Possible names of survivors are listed in** *Ground Zero 1945: Pictures by Atomic Bomb Survivors*

The letter should include several sections: 1) Part of the letter should include their personal feelings about the physical and emotional injuries caused by the bomb to the survivor. 2) Part of the letter should include a discussion of the effects radiation/wind blast that displays understanding of the power of the bomb. 3) Conclusion to include reaction to use of nuclear weapons in the future.

2. Write a newspaper article describing the life of a survivor

**Extension Activities:** Students may conduct research the following on the internet for more information about the human toll of nuclear weapons.

On **The Children of the Atomic Bomb** website click on *After the World had Changed* on the right side column and view Dr. Yamazaki as he relates the story of one survivor.

**Voices of A-Bomb survivors** <http://www.csi.ad.jp/ABOMB/hibakusha.html>

**The Hiroshima Peace Memorial Museum** [http://www.pcf.city.hiroshima.jp/index\\_e2.html](http://www.pcf.city.hiroshima.jp/index_e2.html)

## **The Hiroshima Peace and Culture Foundation** <http://www.inicom.com/hibakusha/>

Video taped testimonies of 100 A-bomb victims to commemorate the International Year of Peace 1986 are transcribed and translated into English on this site. Read their extraordinary experiences. Testimonies of the following survivors are included:

Hiroshi Sawachika  
Isao Kita  
Hiroko Fukada  
Kinue Tomoyasu  
Toshiko Saeki  
Mamoru Yukihiro  
Takehiko Sakai  
Yoshito Matsushige  
Yosaku Mikami  
Akira Onogi  
Akihiro Takahashi  
Yoshitaka Kawamoto  
Akiko Takakura  
Taeko Teramae  
Hatchobori Streetcar Survivor  
Yoshitaka Kawamoto

## **Hiroshima and Nagasaki Remembered** <http://www.hiroshimaremembered.com/history/hiroshima/page14.html>

A variety of information on this site – includes Hibakusha Stories, videos of bombings of Hiroshima and Nagasaki and Maps

### **Comparison research**

During World War II there was a huge lost of civilian lives from the incendiary bombings of Tokyo and the fire bombing of Dresden. The lost of life in these events are also absent from the discussion of WWII. Have students compare and contrast the human toll in these two cities with that of Hiroshima and Nagasaki.

## **STUDENT ACTIVITIES**

**Vocabulary Activities:** Have students define the following:

Radiation  
particles  
ground zero  
hypocenter  
black rain  
blast winds  
fallout  
*Hibakusha*  
*mutations*

### **Questions:**

1. How many atomic bombs were dropped in WWII? Where were the bombs dropped?
2. What was the extent of casualties suffered in each of the locations?
3. Describe the ways radiation affect the human body.
4. Besides radiation what other factors contributed to the huge lost of lives?
5. What long-range effects have been documented in bomb survivors?