

Teacher's Guide

Where the Ground Meets the Sky

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Hands-On Activities

Where the Ground Meets the Sky

by Jacqueline Davies

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It's 1944, and twelve-year-old Hazel finds herself uprooted from her quiet East Coast life and transplanted to an army base in New Mexico that the locals call "the Hill." What is the secret project her father works on night and day? And will her family survive their time on the Hill?

Classroom Activities Linked to History and Social Science

Censorship

While living in Los Alamos during World War II, the residents sent and received letters to and from friends and relatives living off the Hill. However, all letters (both outgoing and incoming) were censored by government employees.

1. Create a classroom mailbox. Appoint several students to act as classroom censors; the rest of the students will act as letter writers. Ask each student to write a letter to a friend or family member outside the classroom.
2. Be sure to inform all students that their letters will be read by the censors.
3. Instruct each letter writer to "post" his or her completed letter by placing it in a stamped, addressed, unsealed envelope and depositing the envelope in the classroom mailbox.
4. Divide the letters equally among the censors and direct them to read their allotted letters. With a heavy black marker, the censors must cross out the following information:
 - any description of the classroom or its location
 - any names of people in the classroom
 - any mention of the weather
 - any descriptions of activities that took place inside the classroom
 - any mention of what the students are learning in the classroom
5. The censors should then include a letter to the recipient asking the recipient to write back to the student via the classroom mailbox. The censors should then seal the envelopes, mark them "Read by the Classroom Censor," and post them to their recipients.

6. As letters from the recipients enter the classroom, gather the unopened letters and distribute them to the classroom censors. The censors must cross out the following information:
 - any questions about the classroom or project
 - any negative comments about anything
7. Ask your students the following questions: How does it feel to write a personal letter that he or she knows will be read by a stranger? How does it feel to receive a letter with missing information? Why was this type of censorship permitted during World War II? Can the student think of another situation in which Americans would willingly submit to such censorship?

Rationing in Action

A variety of products were rationed during World War II, including gasoline, meat, and sugar. Citizens registered with their local Ration Board and were issued ration books with perforated stamps. Each stamp allowed the bearer to purchase a certain amount of a commodity. Of course, shoppers still had to have enough money to purchase an item, but now they also had to have the appropriate number of ration coupons.

Here are some of the items that were rationed during the War and their coupon amounts:

- *pork chops (1 lb.) 7 points*
 - *butter (1 lb.) 16 points*
 - *condensed milk (1 can) 1 point*
 - *cheddar cheese (1 lb.) 8 points*
1. Set up a rationing system in your classroom. Determine those items that will be rationed. Make sure some of the items are necessities (paper, pencils, erasers), while others are luxury items (tissues, candy, trips to the water fountain). A ready-to-print page of ration cards is included on the following page.



_____ Ration Card

Issued by The Ration Board for Class ____

Issued to _____

ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT
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_____ Ration Card

Issued by The Ration Board for Class ____

Issued to _____

ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT
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_____ Ration Card

Issued by The Ration Board for Class ____

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_____ Ration Card

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ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT
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_____ Ration Card

Issued by The Ration Board for Class ____

Issued to _____

ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT	ONE POINT
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2. Have your students set up a classroom Ration Board. The Ration Board determines how many coupons to distribute to each student. (Each student receives the same number of coupons.) The Ration Board may decide to distribute coupons weekly, biweekly, or monthly. Students are free to trade their coupons with each other after receiving them. Students **MUST** produce the correct coupon when receiving rationed items.
3. Have your students record the activity in the classroom. Do some students hoard their coupons? If one student is out of a coupon for a particular item, are other students willing to share? Does rationing promote a sense of community or destroy it? Do students view rationed items differently than unrationed items? Is there any blackmarket activity in the classroom? What happens if the amount of ration coupons distributed is suddenly cut in half? What happens if the coupon amount for an item doubles?

Victory Gardens — Service Learning Project

During peak war years, home front Americans tended approximately 20 million Victory gardens, producing one-third of all vegetables consumed in the United States. Victory gardens helped Americans feed their families at home so that commercially grown food could be used to feed American soldiers overseas. A typical Victory garden might have included beets, cauliflower, carrots, squash, tomatoes, and corn.

1. Instruct your students to choose a site on school grounds and plant a Victory garden. Work with them to establish a schedule for weeding and watering that can be maintained throughout the spring. Good choices for early yielding vegetables include peas, beans, and lettuce.
2. At the end of the school year, have the students harvest the food and deliver it to a local food bank, shelter, or senior center.

Invite a Speaker

1. Invite a member of the school or community who lived during World War II to come to the classroom. Have your students prepare written interview questions, asking the speaker about his or her life, thoughts, interests, and concerns at that time. Allow each student to ask one question at a time until the speaker has answered all the questions.



The Rules of War

For as long as humans have fought wars, there have been rules that govern military actions. These Rules of War fall into four general categories:

- who is allowed to fight (for example, civilians are not supposed to kill enemy soldiers)
- what is considered acceptable warfare (for example, you're not supposed to bomb a hospital, nor are you allowed to use poison gases or germ warfare)
- what is allowed when occupying an enemy territory (you're not supposed to kill civilians)
- the rights and duties of aggressors toward neutral countries (you're not supposed to attack a neutral country)

Any violation of these Rules of War constitutes a war crime, which is punishable in an international court of law.

During World War II, the Rules of War changed, in ways both big and small. For example, at the beginning of the war, precision bombing by air was permitted when it was directed at military targets. However, as the war progressed, precision bombing gave way to the more effective technique of carpet bombing, in which large areas (both military and civilian) were sprayed with artillery. This breakdown in the accepted moral code of conduct for wartime actions gave rise to the concept of Total War—in other words, war without limits.

1. Ask your students to write their own Rules of War. What would they allow? What would they disallow? Can they articulate the “line that cannot be crossed” that defines an immoral act in a time of war?

Plan a Trip to Los Alamos 1944

1. Set the scene for your students: It is 1944. They have just been told that they will be moving to the Hill for an unspecified length of time. In addition to their clothes, there is room for ten things in their suitcase. What ten things will they pack? Why did they choose these items?

A Map of the Manhattan Project

The U.S. coordinated effort to build the world's first atomic bomb was known by the code name “The Manhattan Project.” The goal of the Manhattan Project was top secret, and only a select group of people knew what the goal was. But thousands of people participated in the Manhattan Project, and the work was carried out across the country.



1. Divide your students into groups. Have each group research one of the following sites:
 - Oak Ridge, Tennessee
 - Los Alamos, New Mexico
 - University of Chicago (Chicago, Illinois)
 - Hanford, Washington
 - Washington D.C.
2. You can direct your students to the following sources:
 - *The Manhattan Project* by Daniel Cohen (Twenty First Century Publishers, ISBN 0761303596)
 - *The Manhattan Project and the Atomic Bomb in American History* by Doreen Gonzales (Enslow Publishers, ISBN 0894908790)
 - www.atomicmuseum.com/tour/manhattanproject.cfm
3. Make sure your students answer the following questions: What was the mission at each location? How did each location fit into the overall effort to build the bomb? What is now located at each site?
4. Have students create a map display that shows each location and its significance.

Los Alamos — Then and Now

1. Direct your students to research Los Alamos in 1944 and Los Alamos today. In their research, they can visit the website at www.losalamos.com.
2. Have your students create a Venn diagram that groups characteristics of Los Alamos in 1944, characteristics of Los Alamos today, and characteristics of Los Alamos common to both time periods.

Classroom Activities Linked to English Language Arts

Letter to President Truman / Persuasive Argument

1. Direct your students to the website of hypertextbook (<http://hypertextbook.com/eworld/einstein.shtml>) to read the four letters Albert Einstein sent to President Franklin Roosevelt from 1939–1945.
2. Present your students with the following writing directive:

It is August 5, 1945. The United States has not yet dropped the first atomic bomb on the city of Hiroshima. You are President Harry S Truman's most trusted advisor. He has asked you to write him a letter telling him why he should or should not authorize the dropping of the bomb. You know that he will do whatever you advise. Write the letter expressing your opinion.

Historical Fiction— Three Truths and a Lie

Where the Ground Meets the Sky is a work of historical fiction. Many of the events, people, and details in the book are historically accurate. Some, however, were created by the author.

1. Ask your students to review the following list and vote on which they think are historically documented facts and which are fiction invented by the author. Can they articulate what guides their sense of what is true and what is make-believe?

Robert Oppenheimer (true)

Mr. V (fiction)

Hazel (fiction)

Prayer Rock (fiction)

Illegal amateur radio in the woods (true)

Timoshenko (true)

Cat with radiation poisoning (true)

Flash Gordon (true)

Boy carrying sacks containing dead rabbits and his brother (true)

Ashley Pond (true)

Family hiking trips (true)

The scientists concern that the air would catch on fire (true)

Oral History

1. Ask each student to identify one personal acquaintance (grandparent, neighbor, family friend, church member) who lived through World War II. Have each student prepare written questions before interviewing the elder. If possible, have the students borrow a photograph of the person that dates from 1941–1945. (Impress upon your students the importance of returning these photos in the same condition in which they were borrowed!)

Questions for those interviewees who were on the home front during the war might include:

- What was your neighborhood like?
- What was your school like?
- Did anyone you know go to war?
- Did you listen to the radio a lot?
- Do you remember rationing? What was that like?
- Did you collect scrap?
- Did you buy war stamps?
- What kind of candy did you buy? How much did it cost?
- What kind of music did you listen to?
- What's the bravest thing you did during the war?



Questions for those interviewees who fought in the war might include:

- What countries did you travel to?
 - What was army food like?
 - What was the longest time you spent away from your family?
 - How did you feel about the enemy?
 - Were you often scared during the war?
 - What's the bravest thing you did during the war?
2. Loan a tape recorder to each student (on a rotating basis) so that the student can tape his or her interview. Ask parent volunteers to transcribe each tape, word for word, to the class computer. Compile these oral histories (with accompanying photographs) in a book that can be bound and distributed to each member of the class.

War Around the World / Read and Compare

World War II was truly a global war. Children in many different countries, under many different circumstances, felt the effect of the war on their daily lives.

1. Divide the class into groups: Japan, England, the United States, Germany, and France.
2. Assign each group an appropriate book related to a country's wartime experience. Have each group create a display that describes what life was like for the main character in their book. When the displays are complete, have each group give a short oral presentation. Are there any common threads that run throughout all children's experiences during World War II?

Some suggestions for books include:

England: *Carrie's War*, by Nina Bawden

The Dolphin Crossing, by Jill Paton Walsh

Japan: *Hiroshima No Pika*, by Toshi Maruki

Sadako and the Thousand Paper Cranes, by Eleanor Coerr

Hiroshima, A Novella, by Laurence Yep

United States: *Where the Ground Meets the Sky*, by Jacqueline Davies

Lily's Crossing, by Patricia Reilly Giff

Under the Blood Red Sun, by Graham Salisbury

Farewell to Manzanar, by Jeanne Wakatsuki Houston and James D. Houston

The Invisible Thread: An Autobiography, by Yoshiko Uchida

The Moon Bridge, by Marcia Savin

Germany: *Behind the Bedroom Wall*, by Laura E. Williams

The Diary of Anne Frank, by Anne Frank

Daniel's Story, by Carol Matas

France: *The Good Liar*, by Gregory Maguire

Greater Than Angels, by Carol Matas

For Freedom: The Story of a French Spy, by Kimberly Brubaker Bradley

Classroom Activities Linked to Science and Technology

Technology and Society / Constructing Support Essay

1. Ask your students to respond to the following writing prompt:
“Does technological progress always serve society?”

Instruct students to include three examples that support their argument.

The Psychology of Secrets

In the book, secrets are a way of life on the Hill. The scientists are secretive about their work. Hazel keeps secrets from Eleanor and her parents.

1. With your class, choose a class secret. (The secret does not need to be anything bad or shameful. In fact, it could be something the students would be proud to tell their friends and family.) Make it clear that the students are not allowed to tell *anyone* outside the classroom (including their best friends, their families, even the school principal) what the secret is or even that it exists. How long can your class keep the secret?
2. Have your students keep a journal or meet in regularly scheduled discussion groups to talk about how they feel about keeping the secret. What complications arise in their lives because of this secrecy? Does the one secret lead to other secrets or lies? What do they think Hazel’s mother means when she says that secrets are bad for the soul?

Nuclear Fission

Hazel’s father, along with the other scientists on the Hill, spends countless hours in the Tech Area trying to understand, control, and harness the power of nuclear fission in the form of a bomb.

1. Use the Author’s Note from *Where the Ground Meets the Sky* to launch an exploration of nuclear fission.
2. Have your students visit the following two websites to watch animated models of the nuclear fission process:
 - CNN’s website “The Nuclear Age: A Movie Gallery”
(<http://edition.cnn.com/SPECIALS/1998/06/ground.zero/video/>)
 - University of Waterloo’s website
(<http://www.science.uwaterloo.ca/~cchieh/cact/nuctek/fission.html>)
3. Challenge your students to create their own models that explain nuclear fission. What materials might they use?



Amateur Radio

The operation of amateur radios was illegal during the war, but Simon, Russell, and Hazel choose to break the law to satisfy their need to connect with people off the Hill.

1. Amateur radio clubs are numerous in the United States. Locate a club near you by visiting the website of the National Association for Amateur Radio (<http://www.arrl.org/>) and selecting “Clubs.” Contact your local club and invite a member to visit your class. He or she may be able to bring a portable ham radio to your classroom.
2. If possible, have your students broadcast a message on an amateur radio. How far can their message travel? Display a map that shows the destinations of each broadcast.

The Psychology of Isolation

One of the hardest aspects of life on the Hill was enduring the extreme isolation. Residents were not allowed to have visitors from the outside world. There were no telephones or televisions. And all off-site visits were strictly monitored by G2 men (the precursor to the FBI). In addition, residents were constantly reminded of their isolation by the chain-link fence that enclosed the town.

1. Direct your students to spend one hour each night for a week alone in a room with the door closed. The students may not speak to anyone else or come out of the room for any reason. Tell your students to keep a journal of the experience. Are they bored? Lonely? Frustrated? Does time seem to move more slowly when they are alone in a room? Can they imagine what it would be like to spend a week alone in a room? A month?

Recycling / Service Learning Project

During World War II, long before most Americans were environmentally aware, they embraced recycling as a way to win the war. During the war years, waste was a sin and tantamount to treason. Scrap metal, rubber, paper, and cooking grease were gathered and reused. Leftover food was collected and served again, dressed up as a dish with a name like Victory Casserole. To waste anything was considered immoral and unpatriotic.

1. Guide your students as they examine waste around their school. Can they launch a school-wide recycling program of some kind? What can be saved and reused? Paper? Styrofoam trays? Cans and bottles? Have the students create posters that encourage their schoolmates to recycle. Help them find ways to measure their savings and chart the progress of the school in its effort to recycle.



Classroom Activities Linked to the Arts

The Music of World War II

1. Ask your students to listen to a variety of World War II songs from the following CD collections:
 - Those Were Our Songs: Music of World War II (Capitol Records)
 - World War II Radio (Delta Records)
 - The Words and Music of World War II (Sony Records)
2. Print out the lyrics and read them aloud with your class. (Sing, if you dare!) What were some of the subjects included in the songs? Are the songs sad? Hopeful? Funny? Melancholy? Do any of the songs criticize the war effort or suggest that we shouldn't be fighting the war? What purpose do you think these songs served in mobilizing the home front for the war effort?

Classroom Activities Linked to Social Competency

Name-Calling and Racial Stereotypes

We call people names in an effort to bolster our own sense of superiority and security. Name-calling serves to separate groups of people into factions. This separation allows us to act against a group of people in a way that would be morally unacceptable within our own self-defined group.

During World War II, the term "Jap" was used by Americans of all classes and backgrounds to designate people living in Japan and Americans of Japanese descent. The Japanese were viewed by Americans variously as either subhuman or superhuman. In either case, many Americans at the time believed that the Japanese were not people like "them" and did not deserve the same treatment they would expect at the hands of an enemy.

1. Have your students talk about name-calling incidents from their own lives. Can anyone relate an incident in which name-calling was used to make someone feel like less of a person?
2. Ask students to reflect on the following: How did the use of the word "Jap" help Americans justify dropping the atomic bomb on the cities of Hiroshima and Nagasaki? Do you think President Truman would have authorized the use of the bomb against Germany? Why or why not? Can you think of an instance in which name-calling based on race or ethnicity has been used to justify immoral behavior against a people or country?

