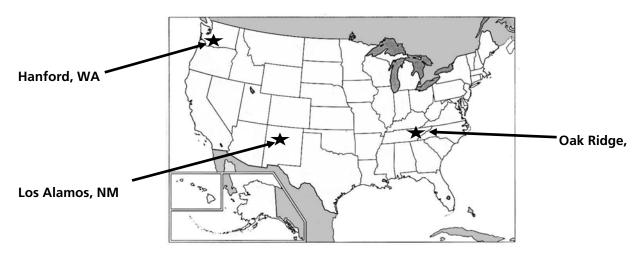


**Manhattan Project National Historical Park** Los Alamos, New Mexico

**JUNIOR RANGER BOOK** 

Manhattan Project National Historical Park is a partnership park between the Department of Energy and the National Park Service.

Three separate sites were located in Los Alamos, NM; Oak Ridge, TN; and Hanford, WA. Each site contributed significantly to scientific study and defense during World War II. Download Junior Ranger books from other sites to learn more!



Junior Rangers are a very special group of people who promise to care for our National Parks so that future generations can enjoy and learn from them too! To become a Junior Ranger, you will need to read information about the Los Alamos Manhattan Project site, answer questions and complete activities. It is OK for parents to help! When you are finished, bring the completed booklet to the visitor center, or mail it in to the address below to receive your badge. **Please tell us where to mail your badge:** 

Name	
Address	
City	
State	7in

For questions, contact the Los Alamos, NM Visitor Center at: 475 20th Street, Los Alamos, NM 87544 (505) 661-6277

Visit us online at www.nps.gov/mapr Check out our Facebook page: www.facebook.com/ManhattanProjectNPS Also find us at Twitter@MnhtnProjectNPS How many pages do I complete to earn my badge? 9th grade and up - All pages 4th-8th grade - 5 pages Under 4th grade - 3 pages



Rev. 8/2017

### WWIII and Two (WWII) was the biggest war in history, fought

World War 1939 - 1945.

The Axis Powers (Germany, Italy, Japan and 8 other countries) fought against the Allied Powers (France, Britain, Russia, U.S. and 57 more countries). In the United States, men and women

from all cultures worked together to win the war.

It all started on September 1, 1939 when Nazi Germany's leader, Adolph Hitler, ordered the invasion of Poland. Britain and France declared war



Germany two days later.



On December 7, 1941, (now called Pearl Harbor Day), Japan's Imperial Navy Air Service made a surprise air attack at Pearl Harbor, Hawaii, USA.

The attack drew the U.S. into the war.

The U.S. decided it had to create better weapons to end the war. The U.S. hired scientists to start work on a very special bomb. Secret sites were located in Manhattan, New York, to study how to create atomic weapons. The first secret headquarters base was in a skyscraper hidden in plain sight - right across from City Hall! The "Manhattan Project" was named after the start up location of this scientific mission. Los Alamos was chosen as the main site for the new laboratory named "Project Y". They helped end this terrible war.

Why do you think this conflict was called a "Wo	orld War"?
•	
The Manhattan Project had this name because	

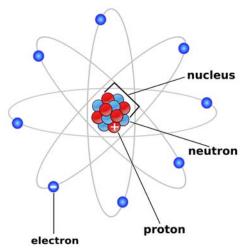
Would you like to be a scientist working on a secret mission for the government?\_

### Atomic Science

In 1945, the first atomic bomb was made by studying the new field of nuclear science - the study of the atomic world.

When scientists need to find answers to hard questions, they conduct experiments. New experiments proved what scientists had long suspected - *All matter in the universe is made up of atoms!* Atoms are tiny particles that are too small to see. They are the basic building blocks of all things!

Scientists discovered that when atoms are smashed together (Fusion), or split apart (Fission), they create a lot of energy! Energy is the ability to do work. And the energy from atom smashing or splitting can be used to create a bomb or power your house.









Fill in the Blanks

- 1. The basic building blocks of matter are called \_\_ \_ \_ \_ \_ \_.
- 2. Scientists harnessed the power of the atom to create \_\_ \_ \_ \_ \_ \_ \_.
- 3. Splitting the atom is called nuclear \_\_ \_ \_ \_ \_ \_ \_ \_.
- 4. The nucleus of the atom has neutrons and \_\_ \_ \_ \_ \_ \_ \_ \_.

### Manhattan Project Timeline

Put the letters in the circles on the timeline in order by date. Start with the earliest date first to spell the code

C

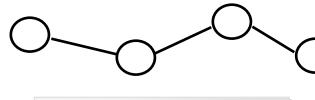
The new, secret town of Los Alamos is built in 1943.

J

The Imperial Japanese Navy attack Pearl Harbor, Hawaii

December 7, 1941.

The U.S. Declares war on Japan.



E

The secret operation called the Manhattan Project began in 1942.

P

X-rays are discovered in 1895 by
Wilhelm Roentgen.

Y

Manhattan Project is made a National Historical Park in 2015.

O

Plutonium was discovered in 1940 by scientists studying how to split atoms to make atomic bombs. Plutonium is created in a reactor when uranium atoms absorb neutrons.

R

Hitler invades Poland September

1939 beginning WWII

T

The US successfully tested an atomic bomb and then used atomic bombs over the Japanese cities of Hiroshima and Nagasaki in 1945.

# Pajarito Plateau

Los Alamos (the cottonwoods) sits on Pajarito (little bird) Plateau. Native Americans lived here over 10,000 years ago. Some Pueblo ancestors built stone houses and cliff-dwellings here around 800 years ago.

Many of their descendants now live on the nearby Santa Clara and San Ildefonso Pueblos. You can see the ancestral Pueblo dwelling sites beside the old Romero Cabin.



The Manhattan Project chose this site because of its isolation, but the government had to acquire land belonging to people living there. Some older buildings belonged to the Los Alamos Ranch School, a prestigious college prep school, which trained boys in outdoor and ranching skills.

Homesteaders, mostly Hispanos, were also made to sell their land to the government for little payment. Many local Hispanics and Native Americans were hired to work on the Manhattan Project.



The Romero Cabin belonged to homesteaders. They raised crops and grazed livestock here in the summers.

Many years after selling their homestead to the government, this cabin was moved downtown.

You can see this old cabin along the "Town site Properties Walking Tour" behind Bathtub Row.

Why did the Manhattan Project select this location?
why did the Mannattan Froject select this location.
How would you feel if you had to leave your home?
Do you think the gavenument were might to take meenle's land
Do you think the government was right to take people's land?
Why or why not?

# Project Y Team

Los Alamos was a unique community that combined ordinary civilians, scientists, engineer detachments, and the military to work together to develop an atomic bomb.



Robert Oppenheimer (left), Scientific Director of the Manhattan Project and Army Lt. General Leslie Groves (right) were the leaders at the Los Alamos secret location.

Local civilians able to pass intense security clearances were issued passes to enter the project area. They performed construction, maintenance, housekeeping and other service positions within the secret city.



The Regular Army and the Women's Army Corps (WACs) performed important work in communications, purchasing supplies and transmitting scientific data in a top-secret environment.



Courtesy of the Los Alamos Historical Society Archives

Which group	described above	would you cho	oose to work	for?	
0 1		J			

Why?

## Life in a Secret City



Courtesy of the Los Alamos Historical Society Archives

From 1943 to 1945, Los Alamos was a top-secret army post isolated from the world and the home of Project Y. The Los Alamos site was hidden by a fence that surrounded the city. Everyone's location and jobs had to be a secret.

Even children had to have a special ID card to live in the town. Kids went to school, played games, went horseback riding and lived in homes just like you, but they could not tell friends or family outside of the town

Imagine where you live is a secret town and you are writing a letter to someone who does not live there with you. You can write to a friend, relative or even a pen-pal. Tell them about your day, but keep your location, the other people who live there and what they are doing a secret.

	<del></del> 5		

### Mamhattam Project Crossword Puzzle

#### Down

- 2. When World War II began, the U.S. President was Franklin D. \_\_\_\_\_.
- After the atomic bomb was dropped on Japan, many people suffered the terrible effects of \_\_\_\_\_\_ sickness.
- An island nation off the east coast of Asia that bombed Pearl Harbor, Hawaii, causing the United States to enter World War II.

ı			2				_	
		1						
					_		-	
	3					4		
		5			6			
					•			
								_
7								
<u> </u>								_
				_				

#### Word Bank

atom

energy

uranium

radiation

Oppenheimer

science

Truman

Roosevelt

Japan

trinity

#### <u>Across</u>

1. A radioactive element (U<sup>92</sup>) used to create atomic bombs and to fuel nuclear reactors.

8

- 3. Smallest bit of matter made of protons, neutrons and electrons.
- 6. U. S. President, Harry S made the difficult decision to drop two atomic bombs on Japan.
- The scientist at Los Alamos who headed efforts to develop the first atomic bomb was J. Robert \_\_\_\_\_.
- 8. Name of the test and test site for the first atomic bomb detonation.
- 9. The Manhattan Project required the accumulated knowledge of many branches of physical \_\_\_\_\_.
- 10. A nuclear weapon releases great amounts of thermal \_\_\_\_\_.

## secret Word Find

Los Alamos was a hidden city with a secret laboratory where weapons were being created for defense in World War II. The words below are related to the town, the scientists, buildings and the important work they did to make an atomic bomb before Germany could complete one. Search for the secret words below. Look in all directions!

D	Α	D	Ε	R	F	V	В	D	Α	Ν	Н	U	K	L	0	Ν	W	Ε	Α	Р	0	Ν
G	J	С	٧	В	М	Н	I	J	Т	М	Ν	V	С	D	D	Ο	Т	G	G	В	Ν	J
Q	Ν	Q	С	٧	В	F	R	G	0	S	D	F	G	Н	R	I	В	Ν	М	Κ	J	Ν
Z	S	В	G	Υ	U	J	Κ	L	M	В	Н	М	1	U	Υ	S	R	D	F	٧	G	Т
В	Α	S	D	F	Ν	0	R	R	1	S	В	R	Α	D	В	U	R	Υ	С	I	U	Ο
M	S	Ζ	Χ	С	V	В	Ν	М	С	Ε	В	0	٧	С	Χ	F	W	Ε	R	R	G	Т
L	Χ	С	V	В	Ν	Χ	D	V	В	С	G	В	J	K	L	М	G	D	I	S	В	F
О	V	G	Υ	J	J	Т	F	D	Ε	R	Р	Ε	I	U	Υ	Т	F	Α	Т	M	Α	Ν
F	U	L	L	Ε	R	L	0	D	G	Ε	0	R	Α	S	D	F	G	Н	1	J	K	L
Р	R	Χ	S	D	С	٧	В	Ν	M	Т	L	Т	0	Т	0	Р	S	Ε	С	R	Ε	Т
I	Α	Χ	С	D	R	F	Т	Ε	R	L	G	0	I	J	L	М	J	I	Α	Р	R	I
Ν	Ν	С	٧	В	Ν	М	R	l	K	Α	L	Р	U	L	Ε	I	0	Р	L	U	Н	Ε
Т	I	Χ	С	٧	В	Ν	I	Ν	М	В	Ν	Р	V	I	Χ	С	Z	С	I	Ε	0	Q
Υ	U	L	٧	D	W	Ε	Ν	R	G	0	U	Ε	K	S	S	М	Т	Р	Т	0	U	U
F	М	S	0	D	F	G	I	Н	J	R	K	Ν	Н	0	G	S	F	Υ	Υ	D	S	Ε
В	Q	0	I	S	Υ	Т	Т	F	G	Α	Н	Н	K	Т	L	0	L	Ν	В	V	Ε	D
D	F	G	Н	W	Α	D	Υ	С	V	Т	0	Ε	Р	0	W	M	I	0	I	J	Н	V
Χ	٧	В	Ν	Ν	Н	L	G	F	S	0	D		S	Р	Ε	S	D	F	Т	G	Н	J
С	Q	Χ	С	٧	В	Ν	Α	В	Ν	R	Ν	М	Р	Ε	С	Ε	D	F	S		Т	Υ
Ε	W	Ε	R	Т	Υ	l	D	М	Р	Υ	I	Е	D	Т	G	S	W	Е	F	٧	Ν	Ν
R	Ε	W	Α	R	D	0	G	Р	0	Н	J	R	Α	D		0	Α	С	Т	I	V	Ε
Т	S	Α	G	Т	D	Ε	Ε	K	0	S	L	Р	0	٧	U	R	В	Ν	DI	U	М	R
Υ	Α	Χ	W	I	U	Ν	Т	Т	J	M	L	Р	Е	С	D	S	W	Е	D	С	V	F
Ε	W	0	R	L	D	W	Α	R	1	1	S	Е	D	Т	G	S	W	Е	F	V	N	Ν

Los Alamos	Secret Laboratory
Louis Slotin	Top Secret
Norris Bradbury	Trinity Gadget
Project Y	Uranium
Radioactive	Weapon
Robert Oppenheimer	World War II
	Louis Slotin Norris Bradbury Project Y Radioactive

# Junior Ranger Pledge

As a Junior Ranger of the Los Alamos Manhattan Project National Historical Park, I promise to learn more about the science and history of the Manhattan Project and World War II. I will explore many more National Parks and help to protect and preserve them for future generations.

### This Certificate is proudly presented







#### For completing the

# Manhattan Project National Historical Park Junior Ranger Activity Booklet Los Alamos, New Mexico

**Park Ranger Name** 



Official Park Date Stamp

