

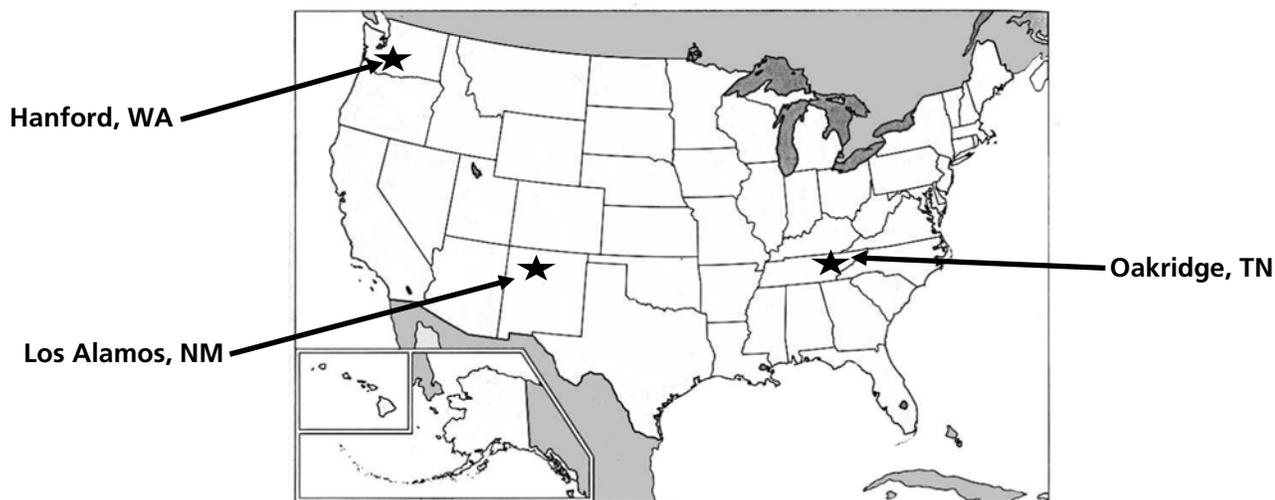


Courtesy of the Atomic Heritage Foundation

**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; Oakridge, TN; and Hanford, WA. Each site contributed significantly to scientific study and defense during World War II. Every location has different stories to share. 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 _____ Zip _____

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

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



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Also find us at [Twitter@MnhtnProjectNPS](https://twitter.com/MnhtnProjectNPS)

WWII and The Manhattan Project

World War Two (WWII) was the biggest war in history, fought between 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). It claimed more lives than any previous war. In the United States, men and women from all cultures worked together to win the war.

It all started when Nazi Germany's leader, Adolph Hitler, invaded Poland. Britain and France declared war on Germany two days later.



On December 7, 1941, (now called Pearl Harbor Day), Japan's Imperial Army made a surprise air attack at Pearl Harbor, Hawaii, USA. The attack drew America into the war.

America knew it had to create better weapons. Afraid that Germany might make the first atomic weapon, the U.S. hired scientists to start work on a 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 science mission. Los Alamos, New Mexico was chosen as the main site for a new atomic bomb laboratory. The lab was given the code name "Project Y". It was in New Mexico where scientists made and tested the first nuclear weapons in the world during WWII. The use of these weapons ended the war.

Why do you think this conflict was called a "World War"? _____

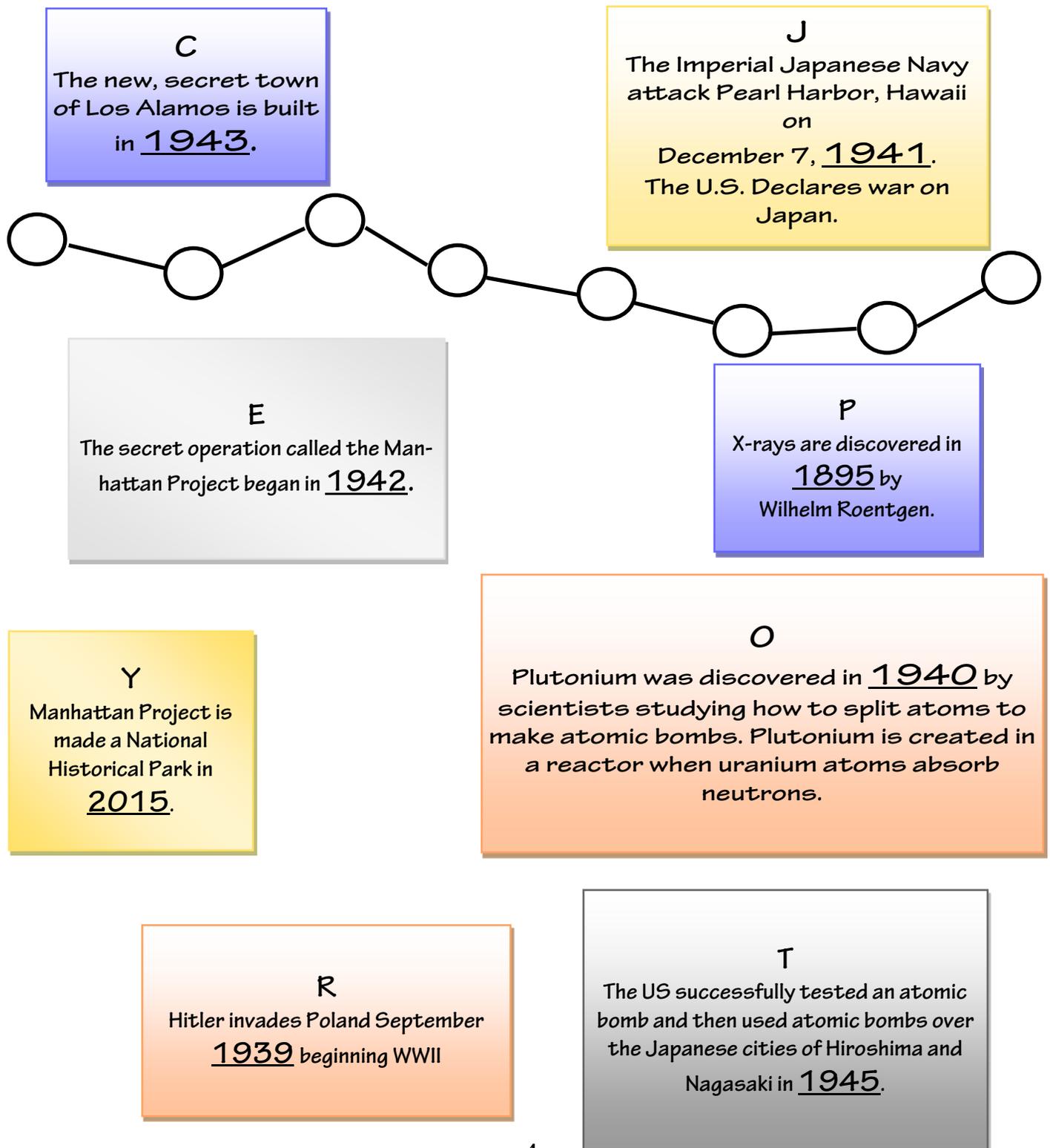
The Manhattan Project had this name because _____

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

Why/Why not? _____

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



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 Puebloans were hired to work on the Manhattan Project. This changed their culture from a barter system to a cash economy.



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 “Townsite Properties Walking Tour” behind Bathtub Row.

Why did the Manhattan Project select this location? _____

How would you feel if you had to leave your home? _____

Do you think the government was right to take people’s land? _____

Why or why not? _____

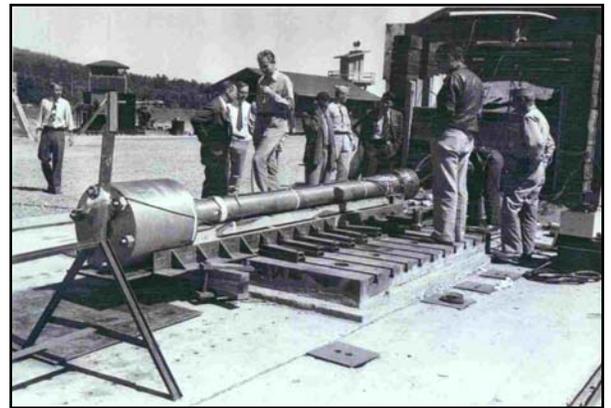
Project Y Team

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), Director of the Los Alamos Laboratory, and Army Lt. General Leslie Groves (right) were the leaders at Los Alamos. Groves was the Officer in Charge overseeing all military and civilian phases of the project. Oppenheimer recruited the scientists and also helped to choose the project's secret location. He is often called the "father" of the atomic bomb.

Scientists such as Norris Bradbury and Hans Bethe worked with the Army Corps of Engineers, often 6 days a week, on weapons planning and the rapid creation of an atomic bomb.



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.

Courtesy of the Los Alamos Historical Society Archives



The Regular Army and the Women's Army Corps (WACs) provided the necessary services to keep Project Y safe and secret. Military Police provided screening at the entrance gate and security escorts within the city. WACs performed important work in communications, purchasing supplies and transmitting scientific data in a top-secret environment.



Which group described above would you choose to work for? _____

Why? _____

Life in a Secret City

From 1943 to 1945, Los Alamos was a top-secret army post isolated from the world and the home of Project Y.

To join the Manhattan Project, scientists agreed to become part of top-secret war research in an unknown part of the country. When they arrived at their first stop near Santa Fe, a gatekeeper named Dorothy McKibbin told them their journey was not over. She gave them passes to enter the city and arranged transportation up a dirt road to their new homes.

The Los Alamos site was surrounded by a fence. Everyone's mailing address was the same: PO Box 1663, Santa Fe, NM. All who lived there had to keep their location, jobs and lives a secret. Scientists and their families tried to live normal lives, but they could not tell anyone where they were or what they were doing. Some common activities included going to movies, skiing, hiking, horseback riding and dancing.



Even children had to have a special ID card to live in the town.

Courtesy of the Los Alamos Historical Society Archives

Kids went to school, played games and lived in homes just like you, but they could not tell friends or family outside of the town anything about their lives.



Courtesy of the Los Alamos Historical Society Archives

Can you keep a secret? _____

How do you think it would feel to live in a secret place? _____

Why do you think it was important to keep the city a secret? _____

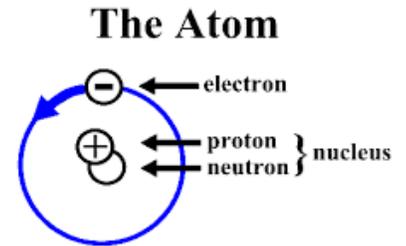
Do you think talking about the activities they did could expose their secret location? _____

Why or Why Not? _____

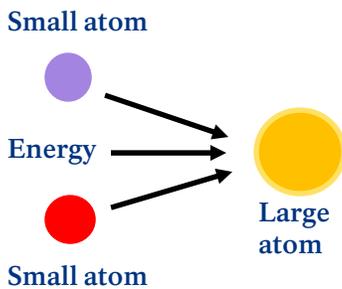
Atomic Science

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

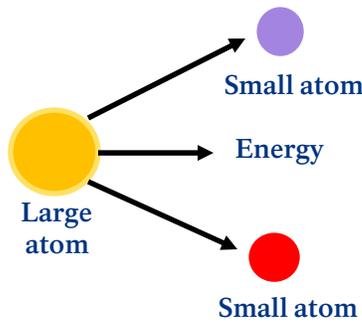
When scientists need to find answers to hard questions, they conduct experiments. New experiments proved what scientists had long suspected - *All matter in the universe is made up of atoms!* Atoms are tiny particles that are too small to see. They are the basic building blocks of all things.



Nuclear fusion



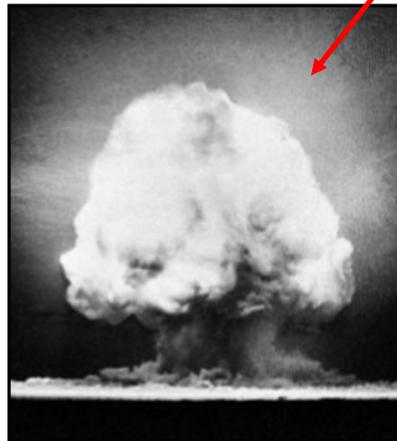
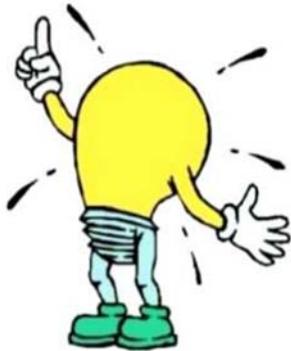
Nuclear fission



Scientists discovered that when atoms are smashed together (Fusion), or split apart (Fission), they create energy.

Energy can be used in an atomic bomb or to make electricity for your home.

Energy is the ability to do work.



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 _ _ _ _ _ .

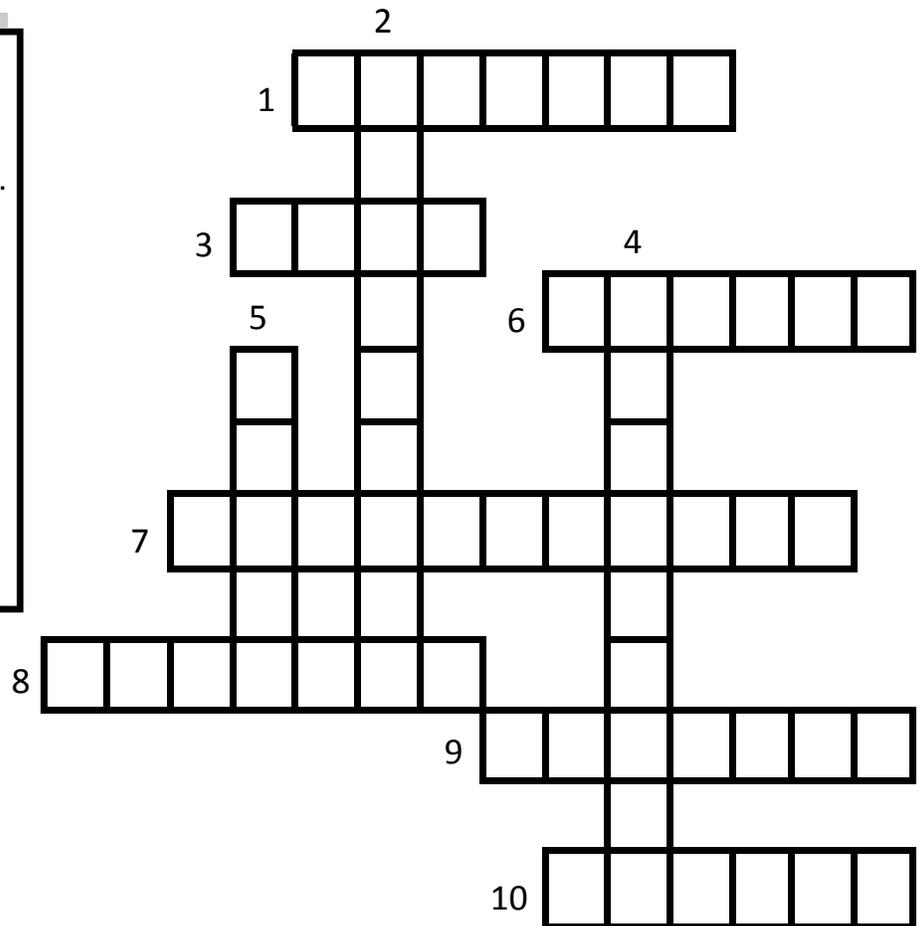
Manhattan Project Crossword Puzzle

Down

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

Word Bank

atom	energy
uranium	radiation
Oppenheimer	science
Truman	Roosevelt
Japan	trinity



Across

1. A radioactive element (U^{92}) used to create atomic bombs and to fuel nuclear reactors.
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.
7. 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!

P D R F B K L J S D F G H U K M N H Y T G V D W E S
D A D E R F V B D A N H U K L O N W E A P O N I B C
G J C V B M H I J T M N V C D D O T G G B N J U I K
Q N Q C V B F R G O S D F G H R I B N M K J N B V D
Z S B G Y U J K L M B H M I U Y S R D F V G T E W Q
B A S D F N O R R I S B R A D B U R Y C I U O J N P
M S Z X C V B N M C E B O V C X F W E R R G T H J U
L X C V B N X D V B C G B J K L M G D I S B F G T Y
O V G Y J J T F D E R P E I U Y T F A T M A N E W Q
F U L L E R L O D G E O R A S D F G H I J K L K H G
P R X S D C V B N M T L T O T O P S E C R E T V B N
I A X C D R F T E R L G O I J L M J I A P R I U Y T
N N C V B N M R I K A L P U L E I O P L U H E R T Y
T I X C V B N I N M B N P V I X C Z C I E O Q R E T
Y U L V D W E N R G O U E K S S M T P T O U U N G U
F M S O D F G I H J R K N H O G S F Y Y D S E R T Y
B Q O I S Y T T F G A H H K T L O L N B V E D S D E
D F G H W A D Y C V T O E P O W M I O I J H V C X S
X V B N N H L G F S O D I S P E S D F T G H J K L P
C Q X C V B N A B N R N M P E C E D F S I T Y U I O
E W E R T Y I D M P Y I E D T G S W E F V N N J U I
R E W A R D O G P O H J R A D I O A C T I V E K P L
T S A G T D E E K O S L P O V U R B N D I U M R E F G
Y A X W I U N T T J M L P E C D S W E D C V F G T Y
E W O R L D W A R I I S E D T G S W E F V N N J U I
Y R E F G A S O V G Y J J T F D E R P E I U Y L I Y

- | | | |
|--------------|--------------------|-------------------|
| Atomic | Los Alamos | Secret Laboratory |
| Baker House | Louis Slotin | Top Secret |
| Criticality | Norris Bradbury | Trinity Gadget |
| Fat Man | Project Y | Uranium |
| Fuller Lodge | Radioactive | Weapon |
| Fusion | Robert Oppenheimer | World War II |

Junior Ranger Pledge

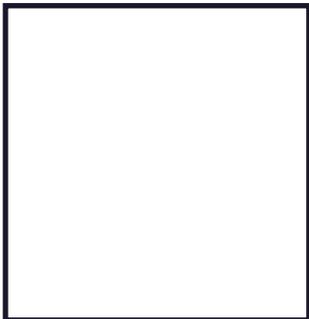
As a Junior Ranger of the Los Alamos Manhattan Project National Historical Park, I promise to learn more about the science and history of the Manhattan Project and World War II. I will explore many more National Parks and help to protect and preserve them for future generations.

This Certificate is proudly presented

to



For completing the
Manhattan Project
National Historical Park
Junior Ranger Activity Booklet
Los Alamos, New Mexico



Official Park Date Stamp

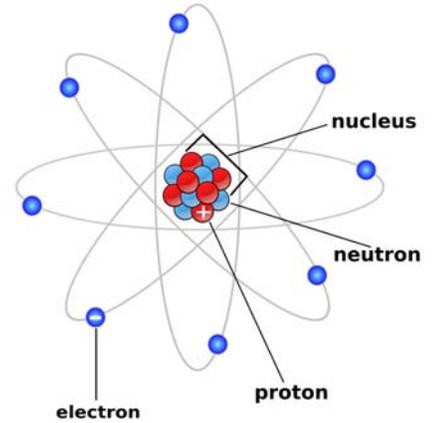
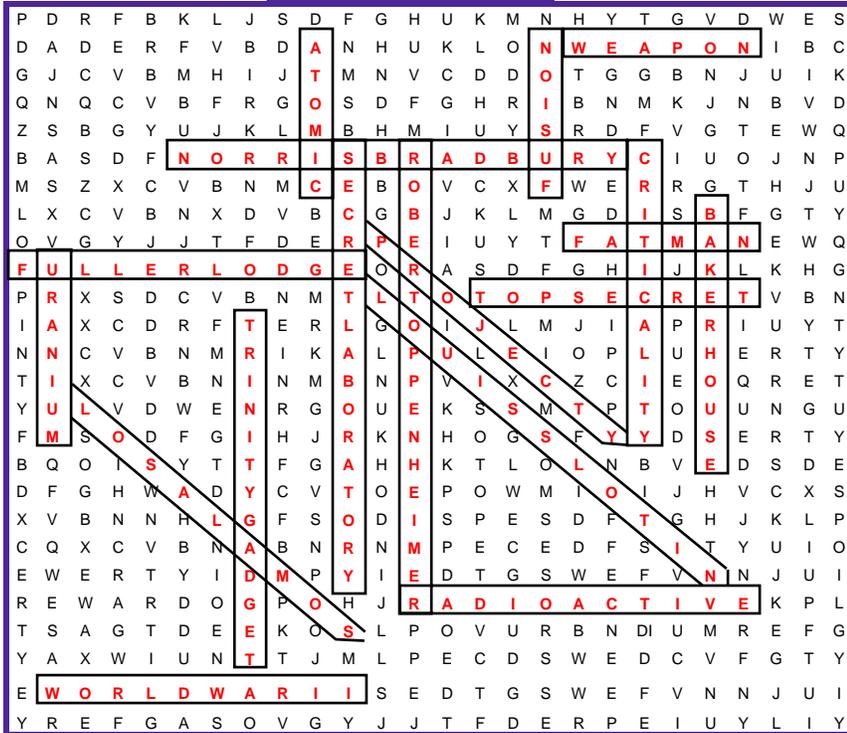


Park Ranger Name



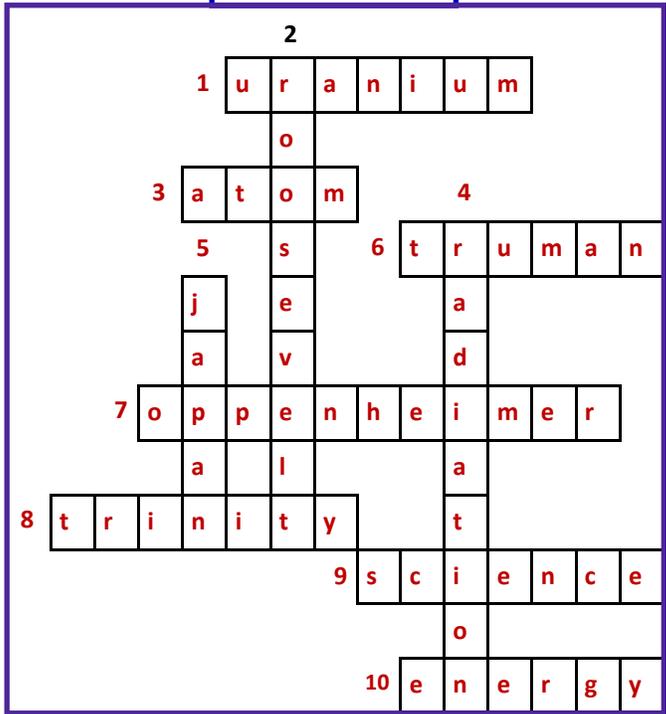
Ranger's Answer Key

Word Search Key



Timeline PROJECT

Crossword



- ### Atomic Science Fill-in-the-Blank Key
- atoms
 - energy
 - fission
 - protons