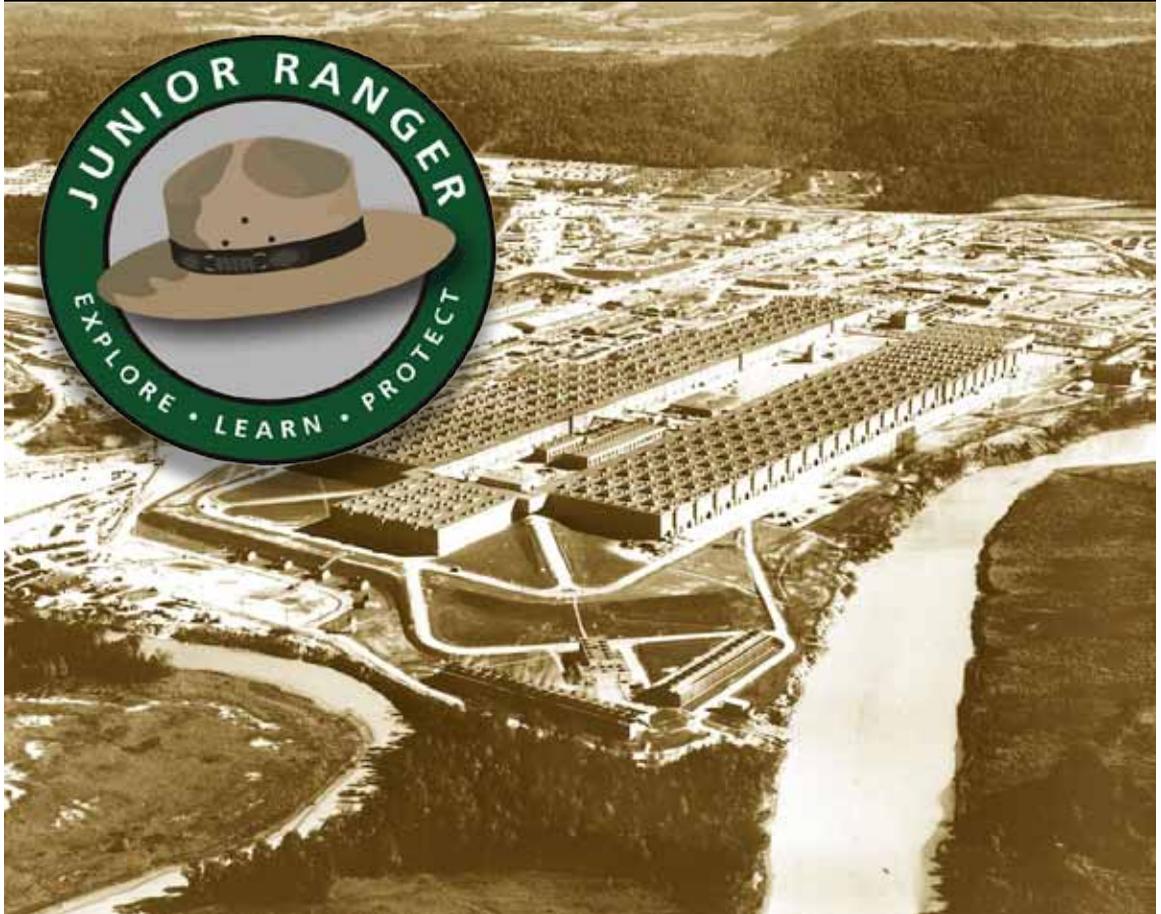


Manhattan Project National Historical Park Oak Ridge, Tennessee

National Park Service
U.S. Department of the Interior



MANHATTAN PROJECT NATIONAL HISTORICAL PARK OAK RIDGE SITE **JUNIOR RANGER BOOK**

This book belongs to:



Manhattan Project National Historical Park is a partnership park, with both the Department of Energy and the National Park Service. Together, they tell the stories of Los Alamos, NM; Hanford, WA; and Oak Ridge, TN. These three sites played a unique and crucial role during the Manhattan Project. We encourage you to visit all three locations.

Junior Ranger Program

Americans protect national parks so everyone can experience our heritage. This handbook will help you discover why Manhattan Project National Historical Park is one of these special places. Allow about 3 hours to earn a Junior Ranger badge. We suggest starting at Manhattan Project National Historical Park Visitor Center Desk at:

American Museum of Science and Energy
300 S. Tulane
Oak Ridge, Tennessee 37830

Several activities can be done nearby. Pick up a park map and get some advice from a park ranger. The Visitor Center Desk is open daily from 9 a.m. to 5 p.m. Eastern Time.

Some other historic spots are:

- Alexander Inn Site
- Graphite Reactor Site
- Rotary Commemorative Walk
- Friendship Bell
- K-25 Overlook
- K-25 Virtual Museum
- Midtown Community Center
- Chapel on the Hill
- Children’s Museum of Oak Ridge
- X-10 Plant Site
- Y12 Visitor Services New Hope Center



Questions?

Call Manhattan Project National Historical Park Visitor Center Desk at (865) 576-6767, located at:

American Museum of Science and Energy
300 S. Tulane
Oak Ridge, TN 37830

Visit us online!



www.nps.gov/mapr



[Twitter@MnhnProjectNPS](https://twitter.com/MnhnProjectNPS)



www.facebook.com/ManhattanProjectNPS



What is a Junior Ranger?

Someone like you who completes Junior Ranger activities and promises to care for our national parks. Have fun exploring! You can earn your badge in a few hours. When you are done, take this handbook to the Visitor Center and show it to a park ranger.

To earn a badge, complete at least 8 handbook activity pages.



1st Activity Page



Designed in 1951, the arrowhead is the National Park Service symbol. Look at it carefully. Each part represents something that park rangers protect. Fill in these words to decode the Arrowhead.

bison sequoia tree lake arrowhead mountain

The _____ represents plants.

The _____ represents animals.

The _____ represents scenic landscapes.

The _____ represents water resources and recreation.

The _____ represents history and culture.



2nd Activity Page

Did You Know?

Yellowstone National Park became the world's first national park in 1872. In the early years, most national parks were in the western states. This is why the badge has western symbols. Today, the National Park System includes seashores, battlefields, monuments (like the Statue of Liberty), huge wetlands, scenic rivers, islands, and urban parks (like Manhattan Project National Historical Park). Record how many arrowheads you see during your visit. Can you spot them on signs, cars, brochures, and uniforms?

List any other national parks you have visited.

- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____
- _____



3rd Activity Page

Manhattan Project National Historical Park Kids in Action Challenge:

There are many fun ways to get moving in this national park. Here's our challenge.

Do one activity for every year of your life. For example, if you are 8 years old, **you must complete 8 things on our list.** Check the square when you finish each one.

- I hiked on _____ Trail.
- I found a historic marker along Emory Road.
- I took a picture of myself in the park.
- I climbed 20 steps.
- I found a trail sign.
- I ran for more than one minute.
- I rode a bike in a park.
- I crossed a footbridge.
- I had a picnic in a park.
- I took the bus tour of the Oak Ridge Facilities.
- I saw my first _____.
- I played _____ in the park.
- I found a trail map on a park bulletin board.
- I visited _____.
- I went to the Linden School Wetlands.
- I found a stick shaped like the letter _____.
- I think _____ counts too!





4th Activity Page

Secret City Challenge

What is the real name of the Secret City? _____

Who was president in 1941? _____

What happened in Hawaii on December 7, 1941?

Which president authorized the dropping of an atomic bomb on Japan to end World War II? _____

Why was the Manhattan Project developed in 1942?

What was an Alphabet House?

How many people lived in the Secret City in 1945? _____

Many unmarried people moved to the Secret City right after college. What was their housing called? _____

Find out how many schools - from elementary through high school - were in operation serving children in the Secret City in 1945. _____

Why did people walk on boardwalks instead of sidewalks?

The Secret City had seven gates during the years 1942-1949. Circle the name of the locations of two of them from this list:

Solway Edgemoor Elza Oliver Springs Blair Road Gallaher Road White Oak



5th Activity Page

Who was the official Manhattan Project of Oak Ridge photographer?

What were the Secret City workers doing that was so secretive?

Who was the army general leading the Secret City project in 1942 and can you name the project? _____

What was the first youth organization in the Secret City in the 1940s?



Can you find a Secret City elementary school that is now a museum for children?



6th Activity Page

What was so important about the number 92 on the Periodic Table to many women who worked at the Manhattan Project?

Periodic Table of Elements

Atomic Number → **7**

Chemical Symbol → **N**

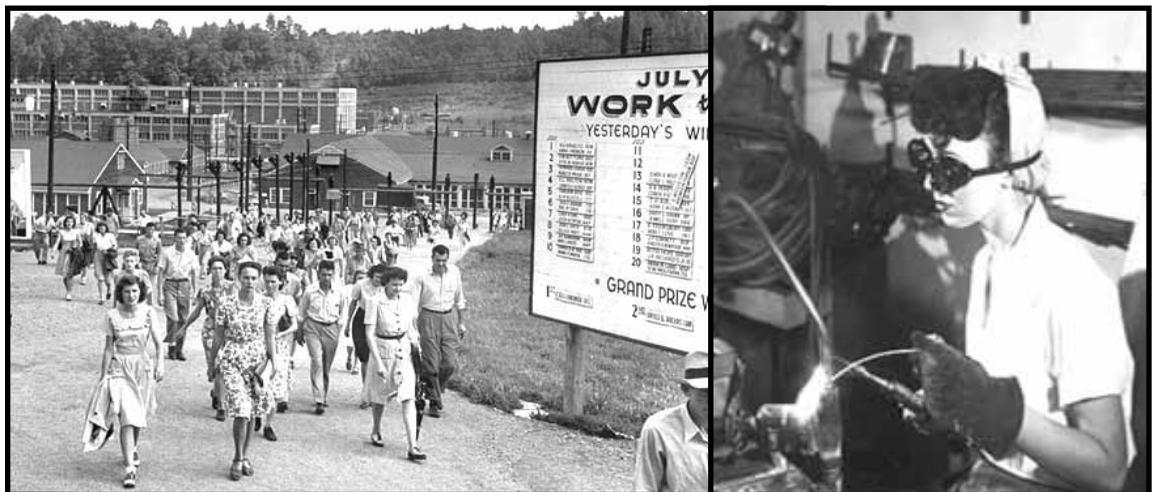
Chemical Name → **NITROGEN**

Atomic Weight → **14**

METALS																		NON-METALS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
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KEY

- SOLID at room temp
- LIQUID at room temp
- GASES at room temp
- RADIOACTIVE
- Artificially created





7th Activity Page

Who were the Calutron Girls?





7th Activity Page (continued)

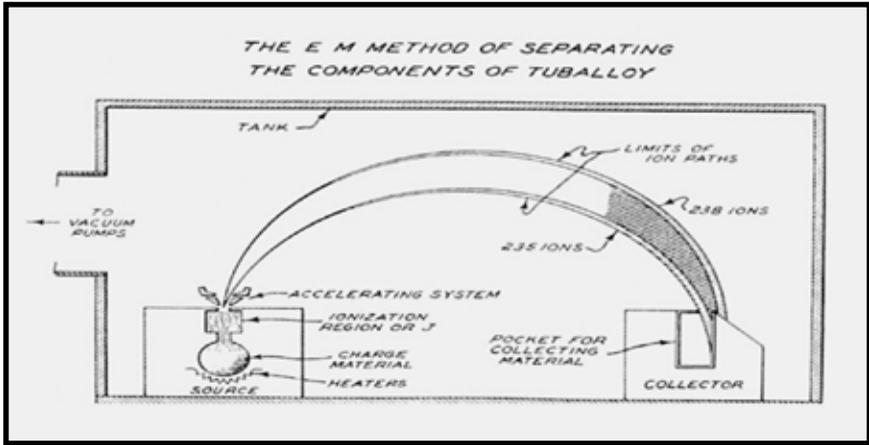
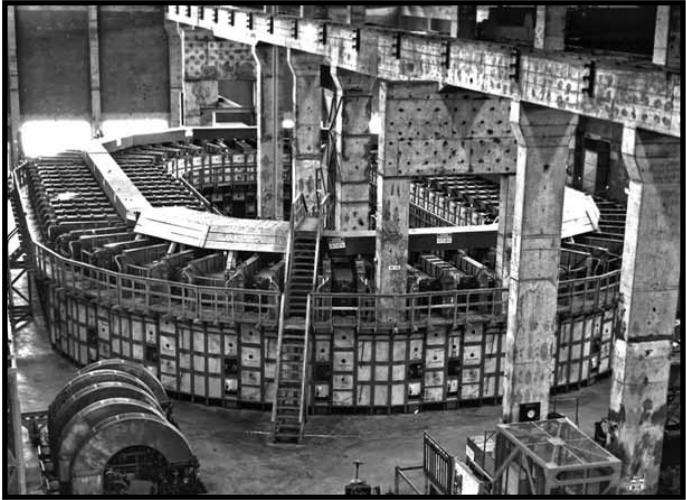


Diagram of uranium isotope separation in the calutron.

Alpha I Racetrack. The calutrons are located around the ring. What did the calutron separation produce?





8th Activity Page

Describe what a day in a kid's life was like in the Secret City in 1945.



Describe the kind of activities or sports that kids could do in the Secret City in 1945-46.





9th Activity Page

Manhattan Project NHP Hidden Word Search

Can you find the words that are important to the Manhattan Project and the Oak Ridge Unit of the Park?

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

MANHATTAN	PLUTONIUM	REACTOR	ROOSEVELT	GROVES
PROJECT	CALUTRON	SCIENTIST	ATOM	ALPHABET HOUSE
SECRET CITY	LOS ALAMOS	OAK RIDGE	URANIUM	HANFORD



Junior Ranger Pledge

As a Junior Ranger of Manhattan Project National Historical Park, I promise to keep learning more about the nature and history of the Manhattan Project and help preserve the park for future generations.

This certifies that _____, age _____, has successfully completed the requirement of a Junior Ranger on this _____ day of _____, 20_____.

Reviewed by Ranger _____
NPS /Name of Ranger

If you can't return to the Visitor Center, mail your handbook to:

Manhattan Project National Historical Park
300 S. Tulane
Oak Ridge Tennessee, 37830

Tell us where to mail your badge:

Name _____

Address _____

City _____

State _____ Zip _____



This certificate is proudly presented to

please print name

for completing the

Manhattan Project National Historical Park Junior Ranger Activity Booklet

Dated this _____ day of _____

Park Ranger Signature