

two-front war" after D-Day? Use evidence from the text to support your answer.

Americans Advance Toward Japan

While war still raged in Europe, American forces in the Pacific had been advancing in giant leaps. Under the leadership of General Douglas MacArthur, they followed an **island-hopping** strategy, capturing some Japanese-held islands and ignoring others in a steady path toward Japan.

Navajo troops played a vital role in the Pacific island-hopping campaign. The Navajo language has no written alphabet, and at the start of the war only a small number of non-Navajo people could understand it—none of them Japanese. Navajo radio operators developed and memorized a secret code using the language, and they used it to send critical messages from island to island. The code was never broken by the Japanese.

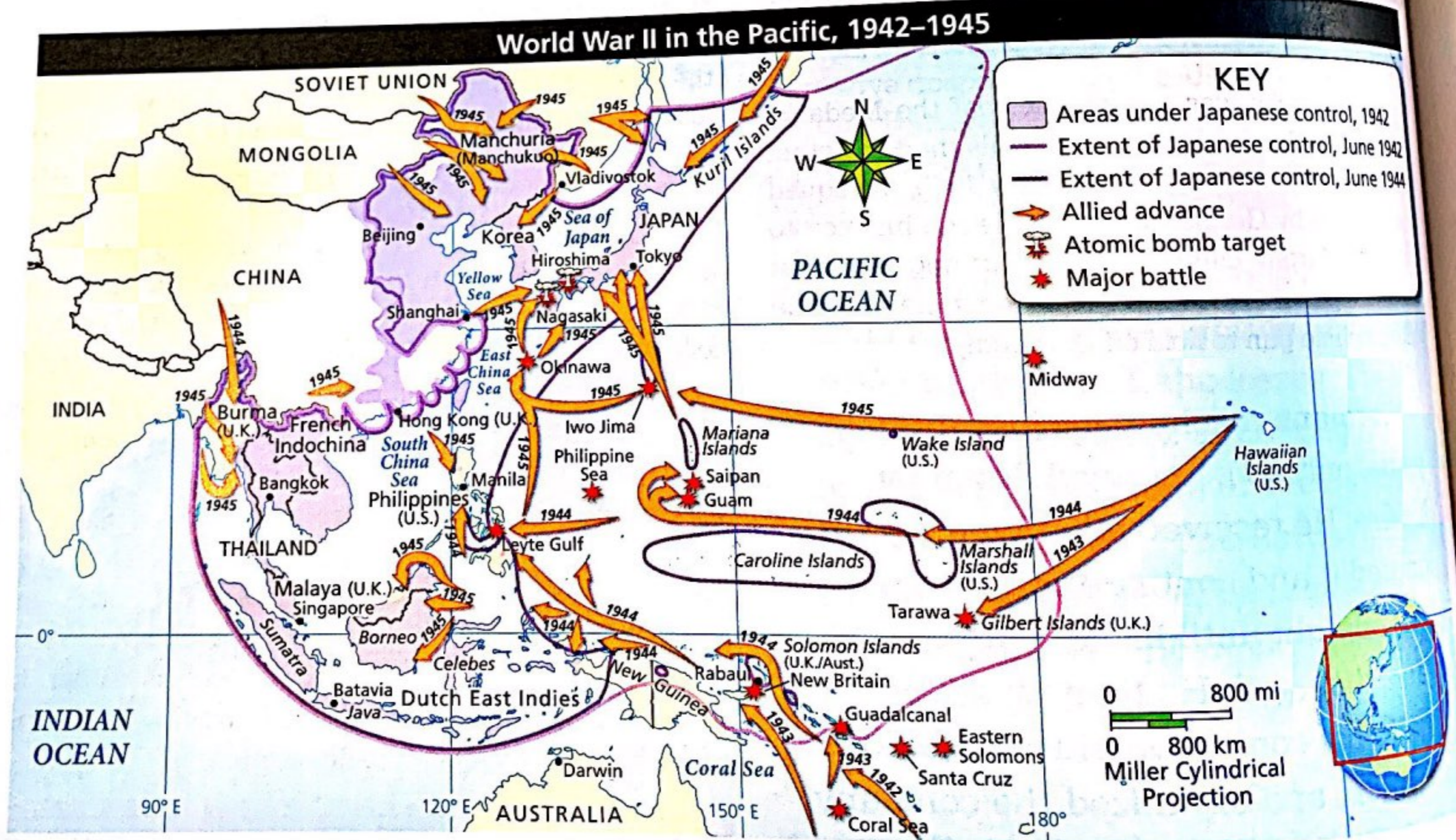
Struggle in the Pacific From Tarawa and Makin in the Gilbert Islands, American forces jumped ahead to Eniwetok and Kwajalein in the Marshall Islands. Then, they took another leap to Saipan, Tinian, and Guam in

the Marianas under Admiral Nimitz, was blocking Japan, and in October General MacArthur began the fight to retake the Philippines.

American forces took each island only after a difficult struggle. Time and again, Japanese defenders fought virtually to the last man. Rather than surrender, many Japanese troops readily killed themselves. At the same time, Japanese **kamikaze** (kah muh KAH zee) pilots deliberately crashed their planes into American ships. By the end of the war, more than 3,000 Japanese pilots had died in kamikaze missions. Their deaths, however, did not prevent MacArthur from retaking the Philippines—as he had promised when he took the islands in 1942—or the U.S. Navy from sinking Japanese ships.

American Forces Near Japan One of the fiercest battles in the island-hopping campaign took place in February and March 1945.

On Iwo Jima (EE woh JEE muh), a 5-mile-long island, 650 miles southeast of Tokyo, the capital of Japan, United States Marines faced a dug-in, determined enemy. In 36 days of fighting, more than 23,000 marines became casualties. But in the end, the Allies took the island.



>> Analyze Maps Use the information on the map to summarize the course of World War II in the Pacific from 1942 through 1945. Support your answer with evidence from the map.



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1945 was even deadlier than Iwo Jima. Only 340...
bases from Japan, Okinawa contained a vital air base...
necessary for the planned invasion of Japan. Taking...
Okinawa was the most complex and costly operation...
of the Pacific campaign, involving half a million troops...
and 1,213 warships. U.S. forces finally took Okinawa...
but at a cost of roughly 50,000 casualties.

Americans Bombers Attack Japan From Okinawa and other Pacific bases, American pilots could bomb the Japanese home islands. Short on pilots and aircraft, low on fuel and ammunition, Japan was virtually defenseless. American bombers hit factories, military bases, and cities. In a single night in March 1945, B-29 bombers destroyed 16 square miles of Tokyo. The raid killed over 83,000 Japanese—more than either of the later atomic bombs—and injured 100,000 more.

USE VISUAL INFORMATION Look at the image of destruction in Tokyo. How might American bombing like this affect the war in the Pacific?

The War Comes to an End

Advances in technology helped determine the outcome of World War II. Allied and Axis scientists labored to make planes faster, bombs deadlier, and weapons more accurate. As always in warfare, specific military needs resulted in scientific discoveries and technological innovations.

Science and Technology Help Win the War

Scientists and engineers on both sides of the war worked on the development of conventional weapons at a rapid pace, creating and improving many wartime technologies. They developed fast and powerful aircraft, ships, and weapons, as well as radar and sonar to detect enemy aircraft and ships. To treat sick and wounded soldiers, they developed a way to mass-produce penicillin, an antibiotic, and to more easily transport and store blood plasma.

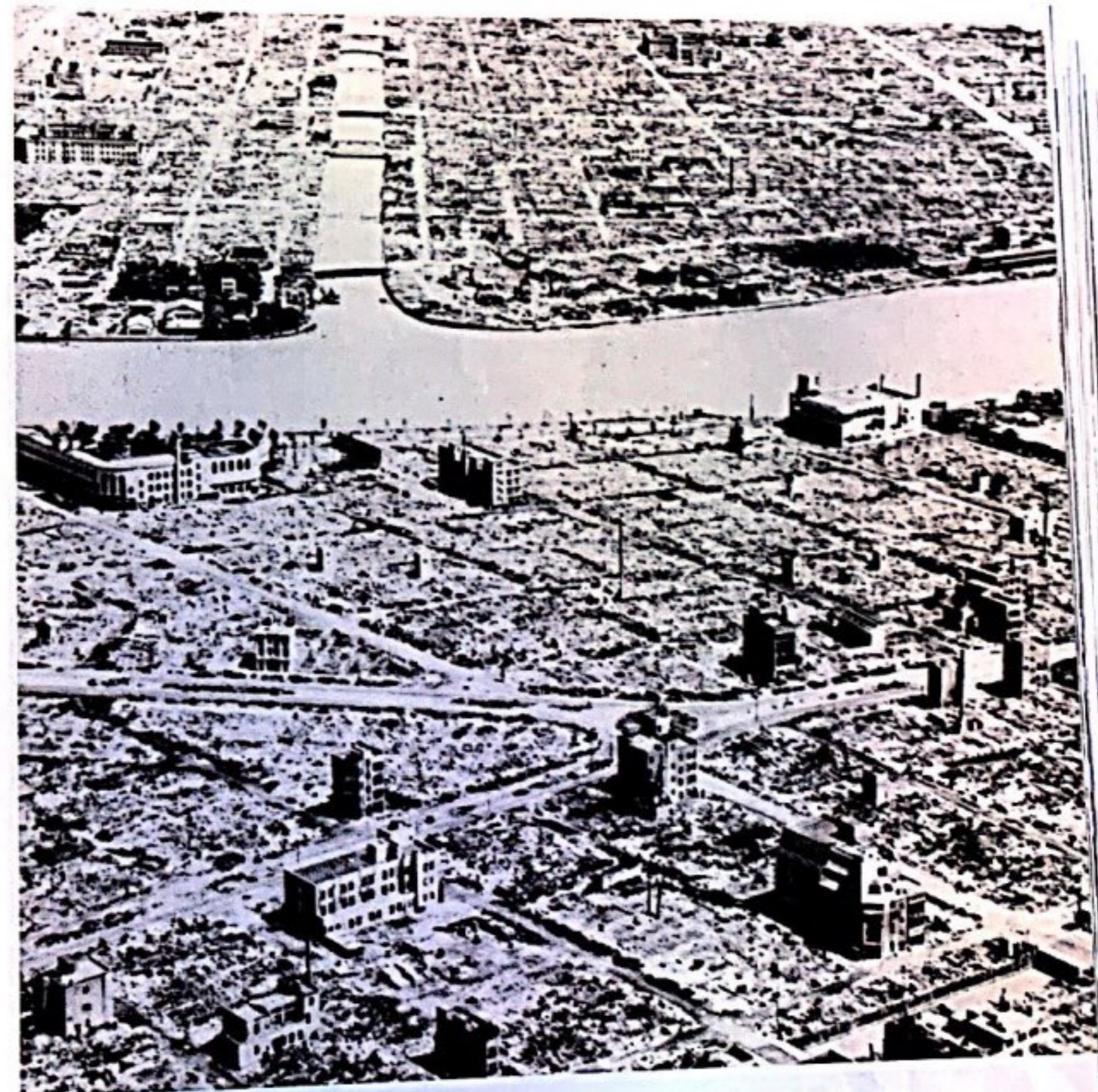
To supply military needs, they invented synthetic materials such as nylon, used to make parachutes and vehicle tires. But the most crucial scientific development of all was the atomic bomb.

Scientists Develop the Atomic Bomb

In the early 1930s, scientists learned how to split the nuclei of certain elements. They also discovered that this process of nuclear fission released tremendous energy. Over the next decade, they learned more about the nature of the atom, the effect of a chain reaction, and the military uses of uranium.



>> A two-man team of Navajo code talkers transmit secret orders over their radio. **Summarize** How did code talkers contribute to the American war effort?



>> In 1945, U.S. bombers launched devastating attacks on Tokyo, killing tens of thousands of people and destroying large areas of the city.

Interactive Gallery



>> The world's first atomic bomb, code-named Trinity, was detonated in the New Mexico desert on July 16, 1945. **Hypothesize** Why do you think it was important to the Allies that they successfully develop an atomic bomb before the Axis?



>> President Harry Truman decided to use the atomic bomb against Japan in an effort to end the war and limit American casualties.

Early in the war, **Albert Einstein**, the world's most famous scientist, signed a letter that alerted President Roosevelt about the need to proceed with development of atomic weapons. In 1942, Roosevelt gave the highest national priority to the development of an atomic bomb. The program, code-named the **Manhattan Project**, cost several billion dollars and employed tens of thousands of people.

The two primary leaders of the project were General Leslie Groves and physicist **J. Robert Oppenheimer**. Groves was responsible for building facilities, acquiring materials, recruiting scientists, and providing security. Oppenheimer ran the scientific aspect of the project from Los Alamos, New Mexico. Scientists working on the top-secret project included many refugees from Europe, including Enrico Fermi, developer of the first atomic reactor.

On the morning of July 16, 1945, in a barren area outside of Alamogordo, New Mexico, the first atomic bomb was tested. The flash of light was clearly visible 180 miles away, and the sound was heard at a distance of 100 miles. Watching the blast, Oppenheimer recalled the following line from a Hindu poem: "Now I am become Death, the destroyer of Worlds."

The general's thoughts were less poetic. Turning to an aide, Groves said, "The war's over. One or two of those things and Japan will be finished."

Truman Decides to Use the Bomb The decision to use the bomb fell directly on the shoulders of Harry Truman.

The new President fully understood the ethical issues presented by using the bomb, especially against civilians. At the same time, he also knew that the Axis Powers had nuclear scientists, and there was no way to tell how close they were to developing their own bomb. Ultimately, Truman's chief priority was to save American lives. His military advisers predicted that, in light of the ferocious defense waged by Japanese soldiers during the island-hopping campaign, an invasion of Japan might cost as many as 1,000,000 American casualties.

In truth, Truman did not agonize over the decision to use the atomic bomb against Japan. For the President, abstract ethical issues did not outweigh very real American lives and an opportunity to end the war. Later, some critics would condemn Truman's decision. But in the late summer of 1945, no one close to him did so.

Hiroshima and Nagasaki Are Destroyed On August 6, 1945, U.S. pilots dropped an atomic bomb on Hiroshima. It exploded at 8:15 A.M. One survivor of the blast later recalled the first moments:

After I noticed the flash, white clouds spread over the blue sky. It was amazing. It was as if blue morning-glories had suddenly bloomed up in the sky. . . . Then came the heat wave. It was very, very hot. Even though there was a window glass in front of me, I felt really hot. It was as if I was looking directly into a kitchen oven.

—Isao Kita, Hiroshima Witness

Within two minutes, more than 60,000 of Hiroshima's 344,000 residents were dead or missing.

Over the next three days, Japanese leaders debated whether to surrender or continue to fight. Then, on August 9, two events rocked Japan. First, the Soviet Union declared war against Japan and invaded Japanese-held Manchuria. Next, the United States dropped a second atomic bomb on Nagasaki, killing 35,000 residents.

Japan Surrenders Debate continued at the highest levels of Japanese government. Finally, Emperor Hirohito made the decision to surrender.

On August 15, the Allies celebrated V-J (Victory in Japan) Day. Japan officially surrendered on September 2 aboard the USS *Missouri*.

But even as the Allies celebrated victory, the horrifying costs of the war began to become clear. As many as 60 million people, mostly civilians, had died in the conflict. Cities, factories, farms, and roads lay in ruins in large parts of Europe and Asia, and millions of refugees were homeless. Winning the war had been an enormous effort for the Allies. Peace would bring new challenges.

2 SUMMARIZE How did scientific discoveries and technological innovations affect the war?



>> Americans celebrate the surrender of Japan in August 1945, New York City. At long last, World War II was over.

ASSESSMENT

- 1. Draw Conclusions** Which Ally bore the brunt of Germany's assault during the first years of the war?
- 2. Draw Conclusions** On what issues did Stalin, Roosevelt, and Churchill disagree?
- 3. Draw Conclusions** Where and when did the Allies open a second front in Europe? What was the result?
- 4. Synthesize** How did the Allies go about pushing the Japanese back in the Pacific?
- 5. Make Predications** What were the consequences of the decision to bomb Hiroshima and Nagasaki?