# Stonehenge

*A Reading A–Z Level Z1 Leveled Book*
*Word Count: 1,678*

LEVELED BOOK • Z[1]

## Connections

### Writing

Imagine living in the time when Stonehenge was built. Write a journal entry detailing how and why it was built. Use details from the text to support your ideas.

### Social Studies

Research more information about Avebury. Use a Venn diagram to compare Stonehenge and Avebury, and write an essay detailing your findings.


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Written by Sean McCollum

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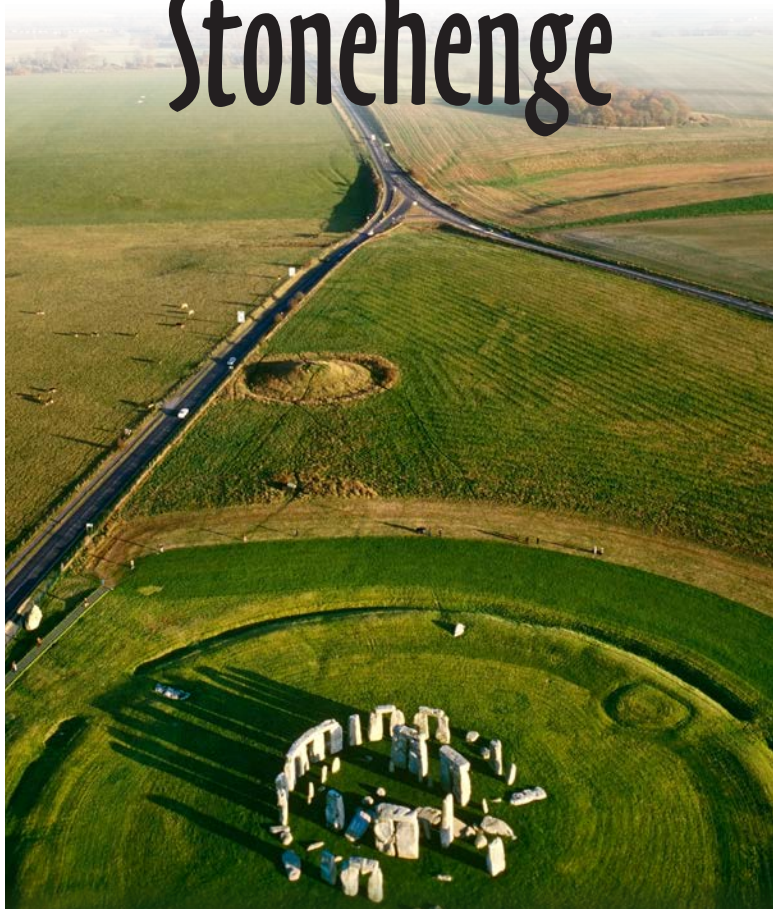
# Stonehenge



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## Focus Question

Why is Stonehenge an important landmark to preserve, and what can it teach us about ancient times?

## Words to Know

| | |
|---|---|
| archaeologists | lintels |
| ceremonial | megaliths |
| embankment | Neolithic |
| heritage | quarries |
| ingenuity | restored |
| innovative | solstices |

Front and back cover: Many of the stones at Stonehenge have toppled over during its long history.

Title page: When seen from above, the circular pattern of Stonehenge is much clearer than when seen from the ground.

Page 3: Tourists can take a shuttle bus or walk from Stonehenge to the nearby visitor center, where many exhibits are on display.

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### Correlation

| LEVEL Z1 | |
|---|---|
| Fountas & Pinnell | W–X |
| Reading Recovery | N/A |
| DRA | 60 |

## Table of Contents





Stonehenge is one of the most popular prehistoric sites in the world.

### A Monument from Before Written History

Thousands of years ago, a community of people went to great effort to raise a ring of massive stones in southern England. Today, this monument is known as Stonehenge. As the centuries have passed, many of these huge **megaliths** have fallen over. Still, it has remained a place of fascination long after people forgot its original purpose.

About nine hundred years ago, an English historian, Geoffrey of Monmouth, tried to explain the mysterious monument. He told a fanciful story about Merlin, the mythical wizard of the King Arthur legends. He wrote that Merlin advised another king to create a memorial that would stand forever. The result was Stonehenge. Monmouth claimed it was built with the aid of Merlin's magic about sixteen hundred years ago.

For hundreds of years, **archaeologists**, historians, and scientists have been investigating Stonehenge, seeking scientific explanations instead of supernatural ones. Archaeologists have excavated the site for clues about its history, builders, and purpose. What researchers have learned is just as remarkable as any legend of kings, wizards, and magic.

Scholars once believed Stonehenge was approximately two thousand years old, but they were stunned when research revealed its builders had begun work on it three thousand years before that. This was during the **Neolithic** period (10,000–2500 BC), a time before the people in Britain had developed metalworking or even invented the wheel.

Archaeologists investigate the origin of the bluestones, a rare type of stone used at Stonehenge.




## Stone Age Site

Stonehenge is built of earth and huge rocks. It is not towering like the Washington Monument or enormous like the great pyramids of Egypt. Instead, it owes much of its majesty to the mystery of its ancient origins. As visitors approach Stonehenge, located on a grassy plain in southern England, its massive standing stones gradually come into view.

The monument consists of circles built inside circles. The outer ring is a ditch that surrounds an **embankment** of raised soil measuring about 110 meters (360 ft.) in diameter. In the center stands the famous ring of stones, many of which are now missing.

Different kinds of stones are used at Stonehenge. The standing sandstone slabs that form the outer ring are called *sarsen stones,* the largest of which weighs about 36,000 kilograms (79,366 lb.). Stone **lintels** lie across the tops of the standing stones and once connected all of them together.

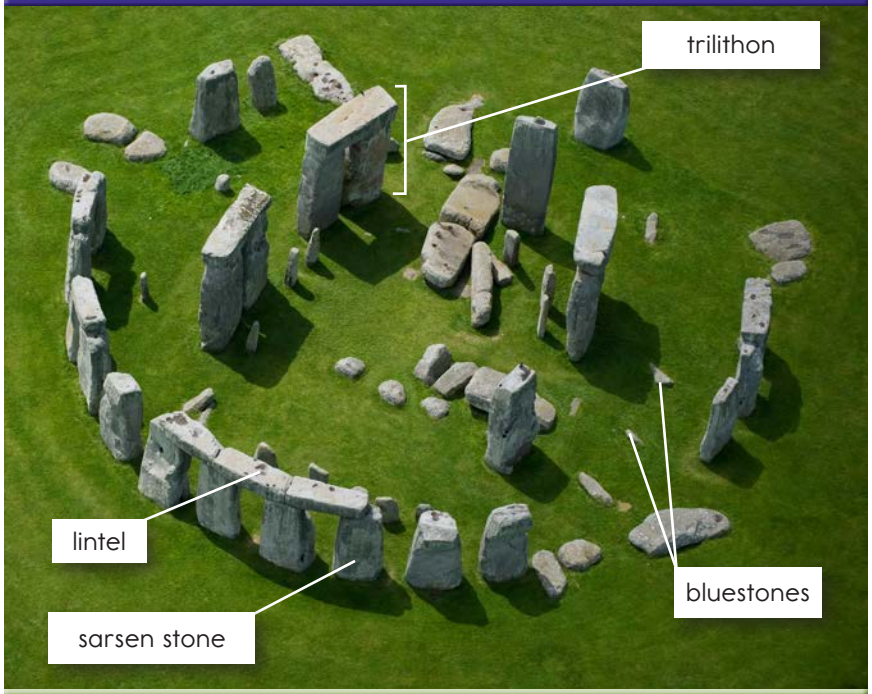
Smaller boulders called *bluestones* lie within the sarsen circle. They are made of a type of rock called *dolerite,* a coarse basalt rock. The largest bluestone weighs about 2,994 kilograms (6,600 lb.).

Inside the ring of sarsen stones is another group of standing stones, set in a horseshoe shape. These stones form *trilithons*, square arches with two standing stones and one lintel lying across. They measure approximately 6.7 meters (22 ft.) across and 9 meters (29.5 ft.) tall.

An artist shows what Stonehenge might have looked like when it was complete.



## Stonehenge

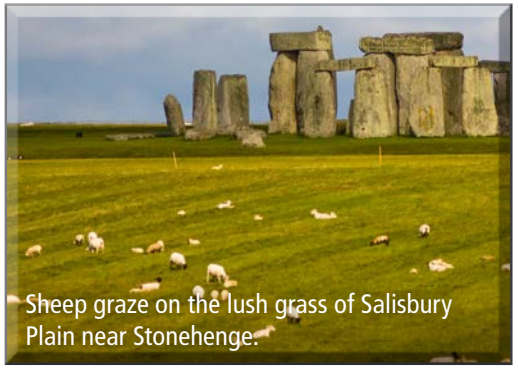



- Today, seventeen sarsen stones mark the curve of the Sarsen Circle, but archaeologists believe there were thirty at one time.
- The large blocks average 22,680 kilograms (50,000 lb.)—more than a school bus—and stand more than 5 meters (16.4 ft.) tall.
- Free-standing stones, including the Heel Stone and Slaughter Stone, are part of the monument but lie outside of the Sarsen Circle.
- Some stones may have been dragged off over the last few thousand years, and others likely sank into the ground.
- Important rituals were likely staged at Stonehenge—crowning rulers, celebrating harvests, or honoring dead ancestors. Some experts believe only high priests or other religious leaders were allowed inside the sacred circle of stones.

## A Landscape of Monuments

Stonehenge sits on Salisbury Plain, an area of rolling hills and grasslands. Evidence suggests people have been living there for more than ten thousand years. During the Neolithic period, Salisbury Plain was wooded and filled with animal life. It was a place of plenty for people who lived as hunter-gatherers. Archaeologists have unearthed ancient pits containing flint tools and weapons along with animal bones. Experts speculate these Neolithic people may have considered the area sacred because of the abundance of food.

Gradually, beginning around 7500 BC, a culture-shaking change took place. The people inhabiting the area began slowly shifting from hunting and gathering to farming. Agriculture made it possible to produce food more reliably and feed larger groups of people. Farming also made large social projects possible. With sufficient food supplies, people there could spend less time farming and hunting and had more time to work on monuments like Stonehenge.



Sheep graze on the lush grass of Salisbury Plain near Stonehenge.



## A Project of 1,500 Years

Archaeological evidence indicates the construction of Stonehenge began around 3000 BC. Amazingly, generations of people continued to work on it for more than a thousand years.

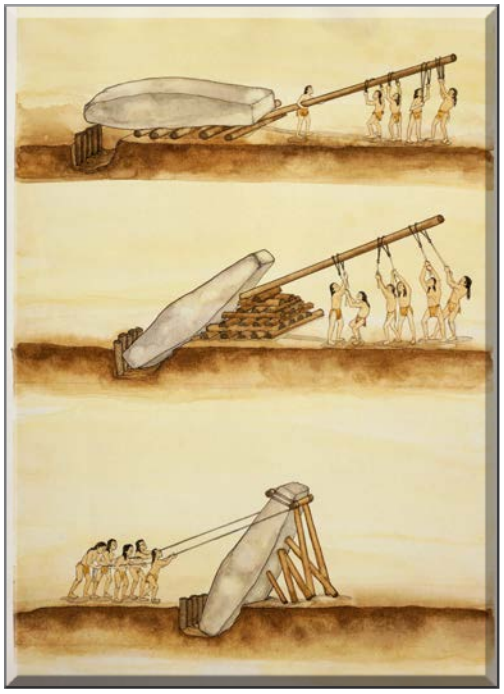
Experts view the transport and placement of the giant stones as one of the great engineering feats of early human history. Archaeologists believe the builders brought the sarsen stones from distant **quarries** located about 32 to 48 kilometers (20–30 mi.) away. How were these giant stones hauled so far in a time before wheels and wagons? That question has led to far-fetched theories about giants, magic, and even space aliens.

Archaeologists have focused on more realistic options. Teams of researchers have conducted experiments, trying to figure out how Stone Age technology could have been used to move the sarsen stones. Researchers have loaded replica stones of similar weights onto wooden sledges. They then slid these sled-like platforms along wooden rails greased with animal fat, pulled by dozens of volunteers. These trials proved it possible to move the giant stones to the Stonehenge site, and this has become a leading theory of how it was done.

For many years, the bluestones presented a greater mystery since no source for them is found anywhere near Stonehenge. Eventually, investigations led researchers to a quarry in Wales—more than 241 kilometers (150 mi.) to the north. For some unknown reason, the creators of Stonehenge believed the heavy bluestones were important enough to transport staggering distances. Some experts speculate these stones may have been loaded onto rafts that floated along the ocean coast to bring them nearer to the Stonehenge site.

These volunteers conducted an experiment in London in May 2016 to see if people could pull a heavy block of stone, such as the ones used at Stonehenge, without the use of machinery.





Some researchers believe the builders of Stonehenge raised stones by erecting wooden platforms beneath them.

Raising the standing stones presented a different engineering challenge. One possible method involved digging a pit under the base of each long slab of stone. Then, wooden wedges could have been inserted gradually beneath the top end, raising it little by little. Once the top was high enough, the bottom then dropped into the pit, and finally, people used ropes to pull it into vertical position.

Placing the lintels on top of the trilithons may have required the most planning and expertise. One possibility is that the builders constructed ramps of dirt and wood that reached to the tops of each pair of standing stones. The lintel might then have been mounted on a sledge, where teams of workers would have used ropes to carefully slide it up the ramp and into place.

Who were these master builders who developed such **innovative** engineering techniques? It is nearly impossible to know what languages they spoke or which religions they practiced. They did not use writing and left behind few examples of their art. All modern understanding of them must be gleaned from archaeological evidence.

Testing of human skeletons and animal bones found near the site offer fascinating clues about their origins. Some of the people who built Stonehenge seem to have moved there from Wales and other neighboring lands.

Archaeologists excavate a quarry in Pembrokeshire, Wales, where Stonehenge's bluestones possibly originated.



However, recent discoveries indicate that a few migrated from as far away as mainland Europe. The grand scale of Stonehenge suggests different groups banded together and shared their knowledge, skills, and muscle to create it.

## The Amesbury Archer

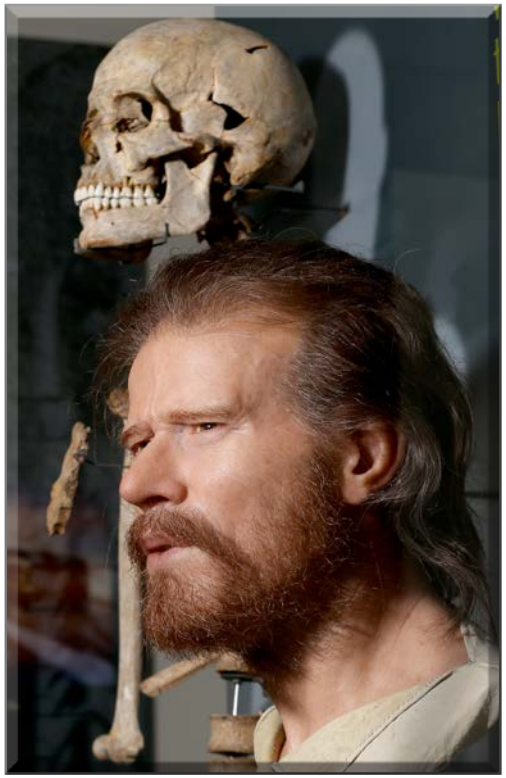
In 2002, archaeologists discovered a skeleton near Amesbury, a town about 3.2 kilometers (2 mi.) from Stonehenge. He died about 4,300 years ago, during the time Stonehenge was still being built. He must have been important because his grave contained gold jewelry, arrowheads, and stone wrist guards commonly worn by archers at that time. By testing chemicals in his teeth, researchers found evidence that he grew up in mainland Europe, near where Germany and Switzerland are today. For some yet unknown reason, this man migrated more than 1,126 kilometers (700 mi.). He died far from his homeland and was buried with honor.

Earrings, rings, pots, and a knife are some of the many objects found surrounding the Amesbury Archer's skeleton.

## Pondering the Purpose of Stonehenge

As mysterious as Stonehenge is, clues about its purpose exist in its design. It does not seem to have ever served any practical purpose, like a shelter or market. For this reason, experts are convinced Stonehenge was an open-air temple, a place people visited for spiritual reasons. Researchers believe its religious and **ceremonial** purposes changed over the course of its long history.

Stonehenge likely began as a burial site. Archaeologists have unearthed as many as 240 burials near the monument, making it the largest Neolithic cemetery in England. Many of the bodies were cremated, and some remains were buried with weapons and jewelry.



A Neolithic man's skeleton found at Stonehenge, along with his reconstructed face, are on display at the visitor center near Stonehenge.



Another popular theory about Stonehenge involves astronomy, since some of the giant stones align with the movements of the sun. This is particularly apparent during the summer and winter **solstices**. The summer solstice, on about June 21 each year, marks the longest day of the year. At dawn that morning, the sun's rays reach directly to the monument's center. The winter solstice, which occurs about December 22, marks the shortest day of the year. At sunset, the sun shines directly between the largest pair of sarsen stones.

In a sense, the arrangement of the monument's stones functions like a giant clock marking the passing of the seasons. For a farming culture, this was vital information for planning when to plant crops.

In recent years, another theory has emerged about the purpose of Stonehenge. Some experts believe it might have been a huge community project to unite people in the area. Evidence suggests that tribes from far and wide journeyed to Stonehenge and many settled there permanently. Perhaps they came to trade or band together for protection, or they could have been drawn by an abundance of food in the region.

The sun rises, shining through the stones of Stonehenge on June 21, 2014, the longest day of the year.

## Stonehenge Today

Stonehenge is one of the most famous prehistoric landmarks in Europe. The Stonehenge the public sees today is not what people saw in 1900. By then, most of the giant stones had tilted or toppled. But in the last century, **heritage** groups have **restored** parts of the monument based on archaeological evidence.

In 1958, cranes were used to lift some of the stones, and some of the standing stones were anchored in concrete. The restorers believed these restorations would give the public a better idea of the monument's original appearance.

Observers watch as the largest crane in England is used to place a lintel across two of Stonehenge's standing stones in 1958.



Researchers continue to investigate Stonehenge and the surrounding area. Today, they use the latest technology to help them map what is hidden beneath their feet. This equipment includes magnetometers that detect magnetic fields, laser scanners that measure potential archaeological sites precisely, and ground-penetrating radar that can scan as deep as 9 meters (29.5 ft.) underground.

### Wowser!

Tourists can visit Stonehenge's visitor center and interact with its exhibits. Replicas of Neolithic houses have been created using authentic materials and techniques, such as roof thatching, based on archaeological finds in the area. Volunteers demonstrate ancient rope weaving, pottery making, and grain grinding.

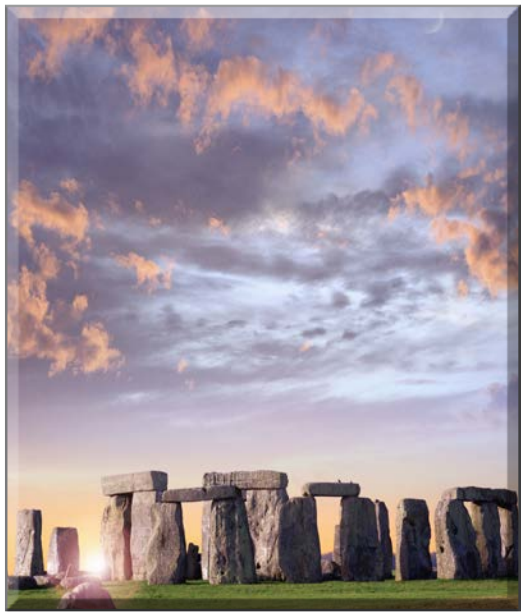
More than nine hundred thousand people visit Stonehenge a year, including two children who try to pull a sarsen stone (left).

Visitors go inside reconstructed Neolithic huts like those in which the builders of Stonehenge might have lived (right).

## The Story of Stonehenge Continues

Stonehenge is an amazing landmark of an ancient time and place. Visitors marvel at the **ingenuity** of those who designed the monument to align with the sun's movements. Impressed by its massive stones, they can picture hundreds of people working together to transport them to the site. They may wonder at the kind of teamwork and muscle it must have required to raise the heavy stones and link them together.

For centuries, Stonehenge served as a central sacred site for the people who lived in the lands around it. The United Nations Educational, Scientific and Cultural Organization (UNESCO) named Stonehenge a World Heritage Site worthy of special recognition and protection. Today, it stirs the imaginations of people all around the world.



Stonehenge is not the only stone circle in England. A larger stone circle has been found in Avebury, 40 kilometers (25 mi.) north of Stonehenge.



## Glossary

**archaeologists** *(n.)* scientists who study the remains of ancient cultures (p. 5)

**ceremonial** *(adj.)* relating to or used for a formal event that takes place on a special occasion (p. 15)

**embankment** *(n.)* a wall or mound of dirt, often used to support a roadway or hold back water (p. 6)

**heritage** *(n.)* a way of life, tradition, or characteristic that is passed down from generation to generation (p. 17)

**ingenuity** *(n.)* cleverness or skill in solving a problem or challenge (p. 19)

**innovative** *(adj.)* creating something new and original (p. 13)

**lintels** *(n.)* pieces of stone or wood lying across the top of an opening, such as a window or door (p. 7)

**megaliths** *(n.)* large stones that prehistoric people used to build things or as monuments (p. 4)

**Neolithic** *(adj.)* of or relating to the latest part of the Stone Age, known for the use of polished stone tools and weapons (p. 5)

**quarries** *(n.)* places where stone, marble, or slate are excavated (p. 10)

**restored** *(v.)* returned something to its original condition (p. 17)

**solstices** *(n.)* either of the two times of the year when the Sun is farthest from the equator (p. 16)