



Amazing World Records of Science and Technology

World's Oldest Observatory: Stonehenge

**Science and Technology
Worksheets and Activities**

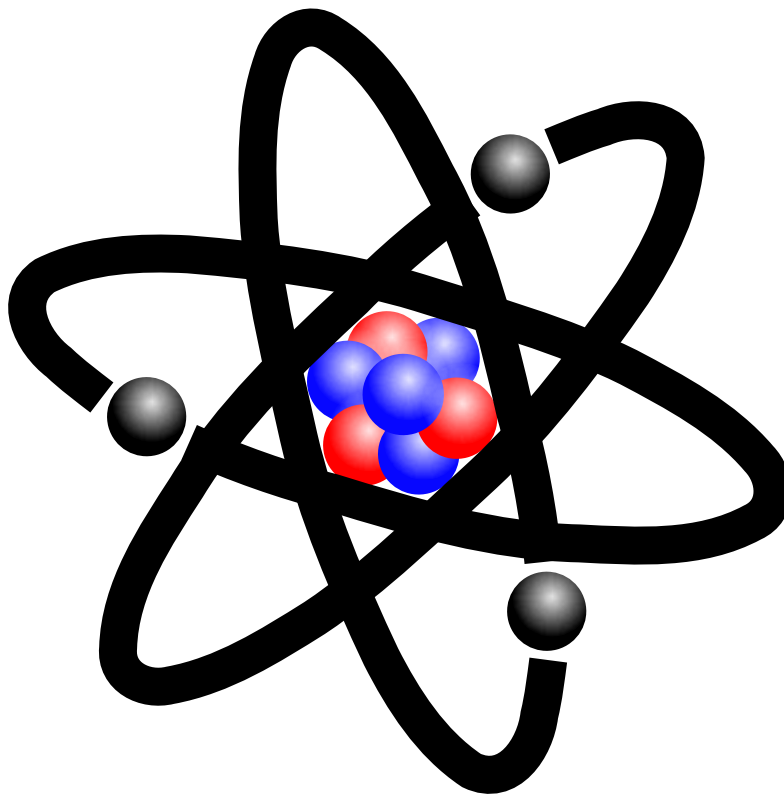
To the Teacher

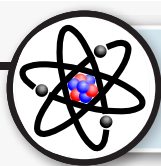
Welcome to a superlative of science and technology!

This teaching packet is excerpted from the book, *Amazing World Records of Science and Technology*; the activity sheet numbers are for reference only.

Sharing World Records

However you integrate this packet into your teaching, always keep in mind that the student activity sheets provide countless opportunities to foster broader and deeper awareness of scientific and technological forces. Keep in mind, too, that children learn best when they're having fun. Foster surprise, delight, and awe about these superlatives of the human experience. Emphasize the drama that underlies every world record. Do your best to evoke wonderment of the grand human story. Good luck in this important work.





10. The World's Oldest Observatory

Stonehenge

The World Record

The world's oldest known observatory is Stonehenge.

Thoughts on Teaching

Point out how many people think that Stonehenge serves no apparent function, but the preponderance of evidence from recent research seems to support the observatory hypothesis.

Major Objectives

By answering the questions and completing the projects on this activity sheet, students will accomplish the following objectives :

- identify, investigate, and discuss the world's oldest observatory.
- explore the relationship of this record-setting object to broader topics and to their own experiences.

Time Required

The activity sheet can be completed in about one class period. Allow additional time for extension and enrichment activities.

The Activity Sheet

Level

basic/intermediate

Answers

Show What You Know

1. nearly 5,000 years; Wiltshire, England
2. students should demonstrate an understanding of the close relationship between celestial observation and religious worship for early people.

Think About It

3. Answers will vary and may include the following responses: they are powerful and mysterious, they follow patterns, etc. Reward thoughtful responses.

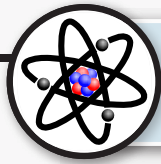
Challenge Yourself

Consider giving extra credit for successfully completing these activities.

Hands-on Enrichment Activity

Obtain for students photographs that depict Stonehenge from a variety of angles and a map of the stones at the site. Students can replicate the stones in the photograph, using clay or foam, and arrange the models in a scale fashion, using the site map as a guide. Have a student orient the model or use a flashlight to demonstrate some of its observatorial qualities.

Visit WorldRecordsBooks.com for more images and activities!



The World's Oldest Observatory

Activity Sheet 10A

Name _____ Class _____ Date _____

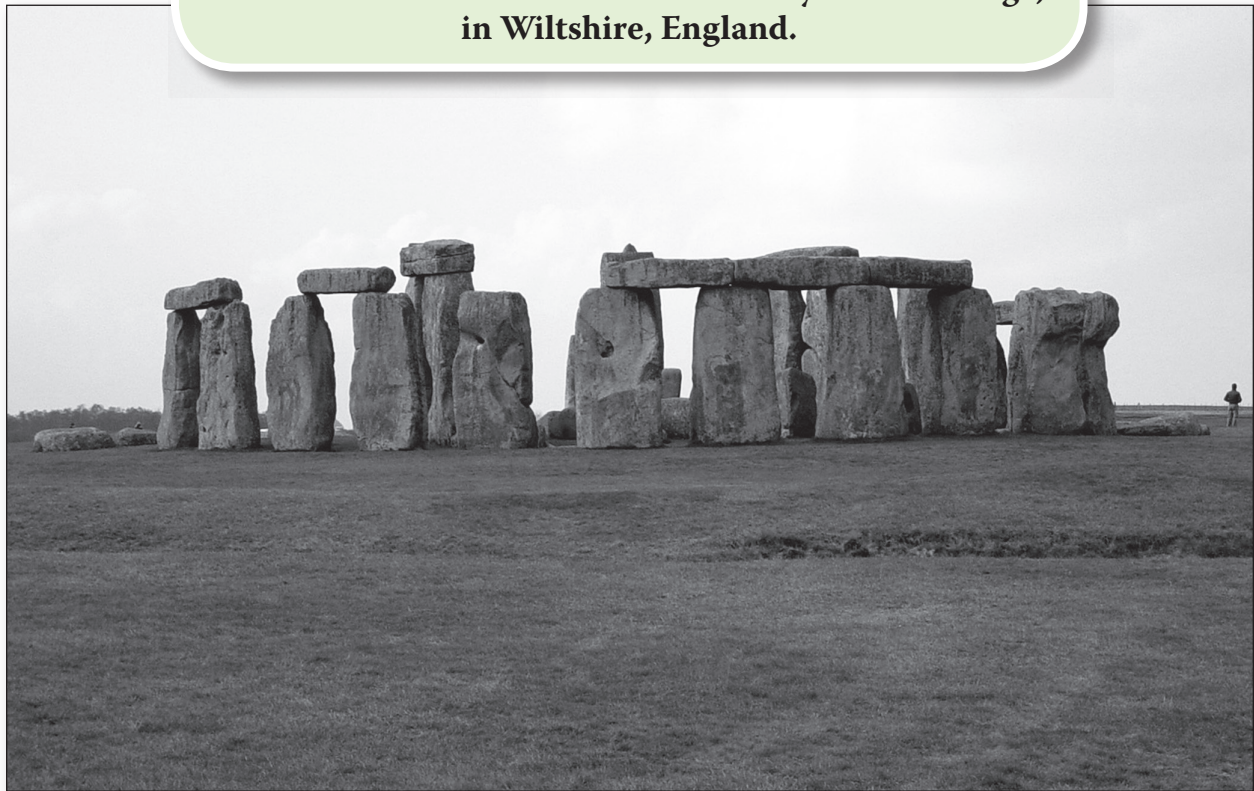
An *observatory* is a place where people observe, or look at and study, the universe beyond earth. Astronomers use the instruments at observatories to learn about the sun and other stars, the planets, and other objects in space. Almost all of what we know about space comes from the work done at observatories.

Most people picture observatories as large, domed buildings with huge telescopes sticking out. Many modern observatories do look like this. But observatories have been around a lot longer than telescopes. In fact, people have been building observatories for thousands of years.

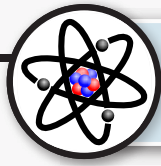
To learn about the oldest observatory, read the following information and study the illustrations. Think about why people want to know about the universe beyond earth. Then answer the questions and complete the activities.

The World Record

The world's earliest known observatory is Stonehenge, in Wiltshire, England.



Stonehenge



The World's Oldest Observatory

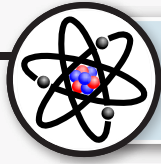
Activity Sheet 10B

Name _____ Class _____ Date _____



Vital Statistics

- ◆ People began building Stonehenge in about 2800 BC—making Stonehenge a nearly 5,000-year-old observatory!
- ◆ Stonehenge doubtlessly was built as a temple or center for worship. However, religious worship and nature were very much related for ancient peoples. So Stonehenge's value as an observatory was a sort of a by-product of its value as a temple.
- ◆ Scientists still dispute whether Stonehenge did, in fact, serve as an observatory, because a lot of the research in this area is guesswork.
- ◆ Scientists who believe Stonehenge was an observatory argue that the alignment of stones and their placement could be used to conduct astronomical observations to
 - ◇ identify and predict the summer solstice
 - ◇ identify and predict the winter solstice
 - ◇ identify and predict the spring equinox
 - ◇ identify and predict the autumnal equinox
 - ◇ function as an annual calendar
 - ◇ predict eclipses
 - ◇ measure the sun's and moon's long-term cycles



The World's Oldest Observatory

Activity Sheet 10C

Name _____ Class _____ Date _____

Modern Observatories: Fascinating Facts

- ◆ Today, there are two main types of observatories: optical observatories and radio observatories. Optical observatories use large telescopes and devices called spectrographs to analyze light from stars and other objects. Radio observatories use huge radio dishes to collect radio waves from space for analysis.
- ◆ The largest telescopes in the world are located at Mauna Kea, Hawaii. Two telescopes there each have mirrors more than 100 feet in diameter.
- ◆ The largest radio dish is located at Arecibo, Peru. It is 1,000 feet in diameter and covers nearly 19 acres.
- ◆ In recent years, observatories have been placed in space. The most famous of these is an optical observatory, the Hubble Space Telescope, which was launched in 1990.

SHOW WHAT YOU KNOW

1. How old is Stonehenge? Where is it located?

2. Explain how Stonehenge was built as a religious temple but works as an observatory.

THINK ABOUT IT

3. Explain why people have tried to understand the objects in the night sky for thousands of years.

CHALLENGE YOURSELF

- ◆ Modern optical observatories are built on mountain tops, far from cities. Why might this be the case?

- ◆ Complete the table.

Event	Date	Definition
Summer Solstice		
Winter Solstice		
Spring Equinox		
Autumnal Equinox		