

6th Grade SS: Geography (to complement TCI)

This article explores the [history](#) of [geography](#).

- How did the ancient Greeks view the world?
- How do we know?
- What evidence did they use?
- What did their maps look like?
- Who were the first geographers?

http://en.wikipedia.org/wiki/History_of_geography

Ancient geography

Ancient Geographers: [Ancient Greek geography](#)

Ancient Greeks environment influenced on the ways people met their needs and the way their culture develops. The [ancient Greeks](#) saw the poet [Homer](#) as the founder of geography. His works the [Iliad](#) and the [Odyssey](#) are works of literature, but both contain a great deal of geographical information. Homer describes a circular world ringed by a single massive ocean. The works show that the [Greeks](#) by the [8th century BC](#) had considerable knowledge of the geography of the eastern Mediterranean. The poems contain a large number of place names and descriptions, but for many of these it is uncertain what real location, if it exists, is actually being referred to.

[Thales](#) of Miletus is one of the first known philosophers known to have wondered about the shape of the world. He proposed that the world was based on water, and that all things grew out of it. He also laid down many of the astronomical and mathematical rules that would allow geography to be studied scientifically. His successor [Anaximander](#) is the first person known to have attempted to create a scale map of the known world and to have introduced the [gnomon](#) to Ancient Greece.

[Hecataeus of Miletus](#) initiated a different form of geography, avoiding the mathematical calculations of Thales and Anaximander he learnt about the world by gathering previous works and speaking to the sailors who came through

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Geography

History of geography

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the busy port of Miletus. From these accounts he wrote a detailed prose account of what was known of the world. A similar work, and one that mostly survives today, is [Herodotus' *Histories*](#). While primarily a work of history, the book contains a wealth of geographic descriptions covering much of the known world. Egypt, Scythia, Persia, and Asia Minor are all described in great detail. Little is known about areas further a field, and descriptions of areas such as [India](#) are almost wholly fanciful. Herodotus also made important observations about geography. He is the first to have noted the process by which large rivers, such as the Nile, build up [deltas](#), and is also the first recorded as observing that winds tend to blow from colder regions to warmer ones.

[Pythagoras](#) was perhaps the first to propose a spherical world, arguing that the sphere was the most perfect form. This idea was embraced by [Plato](#) and [Aristotle](#) presented empirical evidence to verify this. He noted that the Earth's shadow during an eclipse is curved, and also that stars increase in height as one moves north. [Eudoxus of Cnidus](#) used the idea of a sphere to explain how the sun created differing climatic zones based on latitude. This led the Greeks to believe in a division of the world into five regions. At each of the poles was an uncharitably cold region. While extrapolating from the heat of the Sahara it was deduced that the area around the equator was unbearably hot. Between these extreme regions both the northern and southern hemispheres had a temperate belt suitable for human habitation.

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Hellenistic period



These theories clashed with the evidence of explorers, however. [Hanno the Navigator](#) had traveled as far south as [Sierra Leone](#), and it is possible other Phoenicians had circumnavigated Africa. In the [4th century BC](#) the Greek explorer [Pytheas](#) traveled through northwest Europe, and circled the British Isles. He found that the region was considerably more habitable than theory expected, but his discoveries were largely dismissed as fanciful by his contemporaries because of this. Conquerors also carried out exploration, for example, [Caesar's invasions of Britain](#) and [Germany](#), expeditions/invasions sent by [Augustus](#) to [Arabia Felix](#) and [Ethiopia](#) ([Res Gestae](#) 26), and perhaps the greatest Ancient Greek explorer of all, [Alexander the Great](#), who deliberately set out to learn more about the east through his military expeditions and so took a large number of geographers and writers with his army who recorded their observations as they moved east.

The ancient Greeks divided the world into three continents, Europe, Asia, and [Libya](#) (Africa). The [Hellespont](#) formed the border between Europe and Asia. The border between Asia and Libya was generally considered to be the Nile river, but some geographers, such as Herodotus objected to this. Herodotus argued that there was no difference between the people on the

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east and west sides of the Nile, and that the [Red Sea](#) was a better border. The relatively narrow habitable band was considered to run from the Atlantic Ocean in the west to an unknown sea somewhere east of India in the east. The southern portion of Africa was unknown, as was the northern portion of Europe and Asia, so it was believed that they were circled by a sea. These areas were generally considered uninhabitable.

The size of the Earth was an important question to the Ancient Greeks. [Eratosthenes](#) attempted to calculate its circumference by measuring the angle of the sun at two different locations. While his numbers were problematic, most of the errors cancelled themselves out and he got quite an accurate figure. Since the distance from the Atlantic to India was roughly known, this raised the important question of what was in the vast region east of Asia and to the west of Europe. [Crates of Mallus](#) proposed that there were in fact four inhabitable land masses, two in each hemisphere. In Rome a large globe was created depicting this world. That some of the figures Eratosthenes had used in his calculation were considerably in error became known, and [Posidonius](#) set out to get a more accurate measurement. This number actually was considerably smaller than the real one, but it became accepted that the eastern part of Asia was not a huge distance from Europe.

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important sources of information on classical geography. Strabo accepted the narrow band of habitation theory, and rejected the accounts of Hanno and Pytheas as fables. None of Strabo's maps survive, but his detailed descriptions give a clear picture of the status of geographical knowledge of the time. A century after Strabo [Ptolemy](#) launched a similar undertaking. By this time the Roman Empire had expanded through much of Europe, and previously unknown areas such as the British Isles had been explored. The [Silk Road](#) was also in operation, and for the first time knowledge of the far east began to be known. Ptolemy's [Geographia](#) opens with a theoretical discussion about the nature and techniques of geographical inquiry, and then moves to detailed descriptions of much the known world. Ptolemy lists a huge number of cities, tribes, and sites and places them in the world. It is uncertain what Ptolemy's names correspond to in the modern world, and a vast amount of scholarship has gone into trying to link Ptolemaic descriptions to known locations.

[Pliny the Elder's Natural History](#) also has sections on geography.

For the most part Ancient Greek geography was an academic field. There is little evidence that maps or charts were used for navigation. It does, however, seem that at least in Athens the people were acquainted with maps and that several were on public display. It was the Romans who made far more extensive practical use of geography and maps.

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China

Main articles: [Chinese geography](#) and [History of cartography#China](#)



The *Yu Ji Tu*, or *Map of the Tracks of Yu Gong*, carved into stone in 1137, located in the [Stele Forest](#) of [Xian](#). This 3 ft squared map features a graduated scale of 100 [li](#) for each rectangular grid. China's coastline and river systems are clearly defined and precisely pinpointed on the map. [Yu Gong](#) is in reference to the Chinese deity described in the [geographical chapter](#) of the [Classic of History](#), dated 5th century BC.

In [China](#), the earliest known geographical Chinese writing dates back to the [5th century BC](#), during the beginning of the [Warring States \(481 BC-221 BC\)](#).^[1] This was the 'Yu Gong' ('Tribute of Yu') chapter of the book *Shu Jing* ([Classic of History](#)). The book describes the traditional nine provinces, their kinds of soil, their characteristic products and economic goods, their tributary goods, their trades and vocations, their state revenues and agricultural systems, and the various rivers and lakes listed and placed accordingly.^[1] The nine provinces in

the time of this geographical work was very small in terrain size compared to what modern China occupies today. In fact, its description pertained to areas of the [Yellow River](#), the lower valleys of the [Yangtze](#), with the plain

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between them and the Shandong peninsula, and to the west the most northern parts of the [Wei River](#) and the [Han River](#) were known (along with the southern parts of modern day [Shanxi](#) province).^[1]

In this ancient geographical treatise (which would greatly influence later Chinese geographers and cartographers), the Chinese used the mythological figure of [Yu the Great](#) to describe the known earth (of the Chinese). Apart from the appearance of Yu, however, the work was devoid of magic, fantasy, Chinese folklore, or legend.^[2] Although the Chinese geographical writing in the time of [Herodotus](#) and [Strabo](#) were of lesser quality and contained less systematic approach, this would change from the 3rd century onwards, as Chinese methods of documenting geography became more complex than found in Europe (until the 13th century).^[3]

The earliest extant maps found in archeological sites of China date to the 4th century BC and were made in the ancient [State of Qin](#).^[4] The earliest known reference to the application of a geometric grid and mathematically graduated scale to a map was contained in the writings of the cartographer [Pei Xiu](#) (224–271).^[5] From the 1st century AD onwards, official Chinese historical texts contained a geographical section, which was often an enormous compilation of changes in place-names and local administrative divisions controlled by the ruling dynasty, descriptions of mountain ranges, river systems, taxable products, etc.^[6] The ancient Chinese historian [Ban Gu](#) (32–92) most likely started the trend of the [gazeteer](#) in China, which became prominent in the [Southern and Northern Dynasties](#) period and [Sui Dynasty](#).^[7] Local gazeteers would feature a wealth of geographic information, although its cartographic aspects were not as highly professional as the maps created by professional cartographers.^[7]

From the time of the 5th century BC *Shu Jing* forward, Chinese geographical writing provided more concrete information and less legendary element. This example can be seen in the 4th chapter of the [Huainanzi](#) (Book of the Master of Huainan), compiled under the editorship of Prince [Liu An](#) in 139 BC during the [Han Dynasty \(202 BC-202 AD\)](#). The chapter gave general descriptions of [topography](#) in a systematic fashion, given visual aids by the use of maps (di tu) due to the efforts of Liu An and his associate Zuo Wu.^[8] In [Chang Chu's Hua Yang Guo Chi \(Historical Geography of Szechuan\)](#) of 347 AD, not only rivers, trade routes, and various tribes were described, but it also wrote of a 'Ba Jun Tu Jing' ('Map of Szechuan'), which had been made much earlier in 150 AD.^[9] The *Shui Jing (Waterways Classic)* was written anonymously in the 3rd century during the [Three Kingdoms](#)

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era (attributed often to [Guo Pu](#)), and gave a description of some 137 rivers found throughout China.^[10] In the 6th century AD, the book was expanded to forty times its original size by the geographers [Li Daoyuan](#), given the new title of [Shui Jing Zhu](#) (*The Waterways Classic Commented*).^[10]

In later periods of the [Song Dynasty](#) (960-1279 AD) and [Ming Dynasty](#) (1368-1644 AD) there were much more systematic and professional approaches to geographic literature. The Song Dynasty poet, scholar, and government official [Fan Chengda](#) (1126-1193) wrote the geographical treatise known as the *Gui Hai Yu Heng Chi*.^[11] It focused primarily on the [topography](#) of the land, along with the agricultural, economic and commercial products of each region in China's southern provinces.^[11] The [polymath](#) Chinese scientist [Shen Kuo](#) (1031-1095) devoted a significant amount of his written work to geography, as well as a hypothesis of land formation ([geomorphology](#)) due to the evidence of [marine fossils](#) found far inland, along with [bamboo](#) fossils found underground in a region far from where bamboo was suitable to grow. The 14th century [Yuan Dynasty](#) geographer [Na-xin](#) wrote a treatise of archeological topography of all the regions north of the Yellow River, in his book *He Shuo Fang Gu Ji*.^[12] The Ming Dynasty geographer [Xu Xiake](#) (1587-1641) traveled throughout the provinces of China (often on foot) to write his enormous geographical and topographical treatise, documenting various details of his travels, such as the locations of small gorges, or [mineral](#) beds such as [mica](#) schists.^[13] Xu's work was largely systematic, providing accurate details of measurement, and his work (translated later by Ding Wenjiang) read more like a 20th century field surveyor than an early 17th century scholar.^[13]

The Chinese were also concerned with documenting geographical information of foreign regions far outside of China. Although Chinese had been writing of civilizations of the Middle East, India, and Central Asia since the traveler [Zhang Qian](#) (2nd century BC), later Chinese would provide more concrete and valid information on the topography and geographical aspects of foreign regions. The [Tang Dynasty](#) (618-907 AD) Chinese diplomat [Wang Xuan-ce](#) traveled to [Magadha](#) (modern northeastern [India](#)) during the [7th century](#) AD. Afterwards he wrote the book *Zhang Tian-zhu Guo Tu* (Illustrated Accounts of Central India), which included a wealth of geographical information.^[12] Chinese geographers such as [Jia Dan](#) (730–805) wrote accurate descriptions of places far abroad. In his work written between [785](#) and [805](#) AD, he described the sea route going into the mouth of the [Persian Gulf](#), and that the medieval [Iranians](#) (whom he called the people of the Luo-He-Yi country, ie. [Persia](#)) had erected

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'ornamental pillars' in the sea that acted as [lighthouse](#) beacons for ships that might go astray.^[14] Confirming Jia's reports about lighthouses in the Persian Gulf, Arabic writers a century after Jia wrote of the same structures, writers such as [al-Mas'udi](#) and [al-Muqaddasi](#). The later Song Dynasty ambassador Xu Jing wrote his accounts of voyage and travel throughout [Korea](#) in his work of 1124 AD, the *Xuan-He Feng Shi Gao Li Tu Jing (Illustrated Record of an Embassy to Korea in the Xuan-He Reign Period)*.^[12] The geography of medieval [Cambodia](#) (the [Khmer Empire](#)) was documented in the book *Zhen-La Feng Tu Ji* of 1297 AD, written by [Zhou Daguan](#).^[12]