

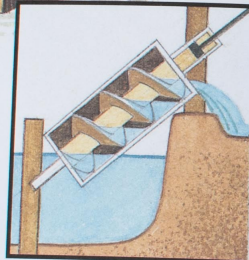
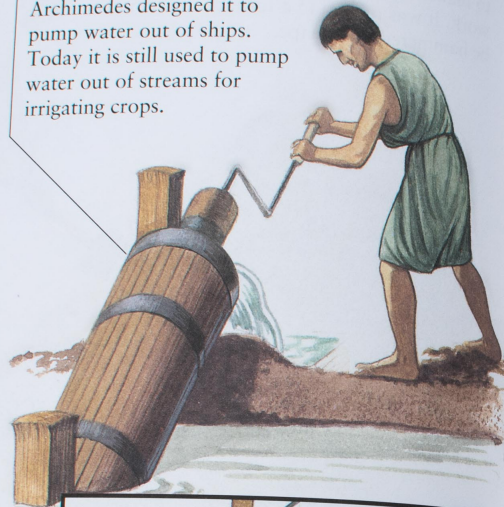
LEARNING AND INVENTIONS

The Greeks had enormous curiosity. They liked to understand how things worked. Greek doctors would try to understand disease. Greek astronomers would observe the stars. Greek scientists, such as Aristotle and Archimedes, studied the world around them, and its animals, plants and different peoples. They recorded their ideas and laid down the foundations for modern maths and science.

Philosophers (lovers of wisdom) such as Plato and Socrates would ask questions like: 'What is a good man?' and 'Is there a best way to run a state?' They would argue about these problems in small groups. Luckily many of their discussions were written down and can still be read today.

ARCHIMEDES' CREW

The Archimedes screw lifted water by forcing it up a pipe. Archimedes designed it to pump water out of ships. Today it is still used to pump water out of streams for irrigating crops.

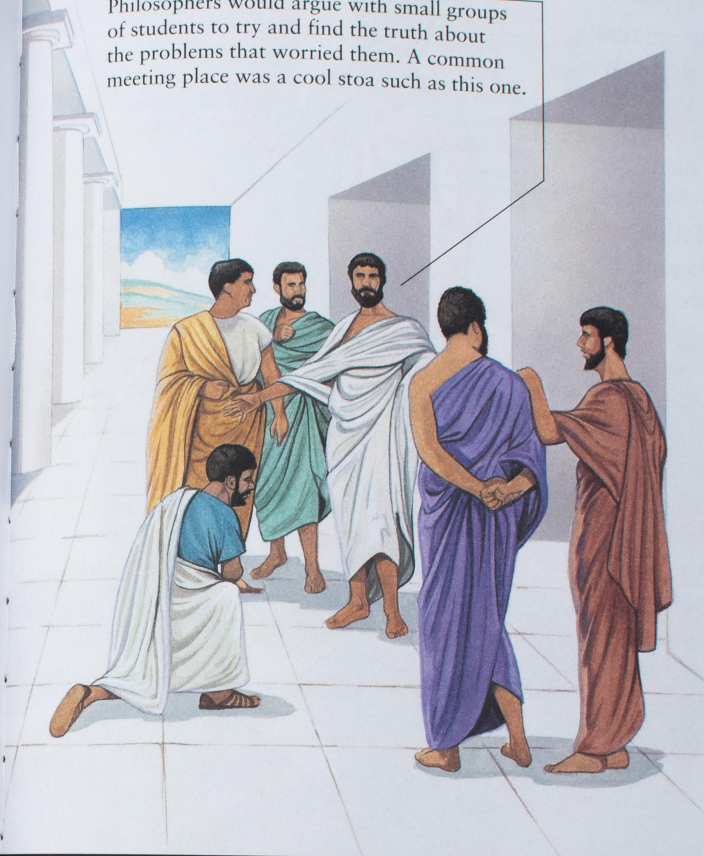


HOW IT WORKS

The end of the screw was placed in water. As it was turned, the water was forced upwards until it poured out at a higher level.

PHILOSOPHER TEACHES AT THE STOA

Philosophers would argue with small groups of students to try and find the truth about the problems that worried them. A common meeting place was a cool stoa such as this one.



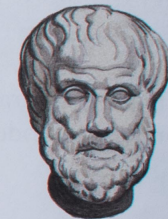
SOCRATES

Socrates was one of the most famous philosophers. He was put to death for questioning belief in the gods.

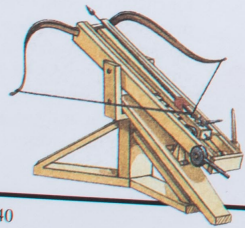


ARISTOTLE

Aristotle, one of the first great scientists, wrote books on biology, astronomy, politics and maths.

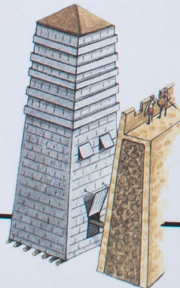


 LOOK OUT FOR THESE



ARROW MACHINE

The 5th and 4th centuries BC were a time of war, with rival cities trying to conquer each other. Most new inventions were connected with warfare. This arrow machine was invented at Syracuse, a city well known for its attacks on others.



SIEGE MACHINE

Most Greek cities had strong walls around them. The only way to capture these cities was to make siege machines such as this one. The city was attacked by catapults from the top of the machine, or soldiers climbed up inside them and fought their way onto the city walls.

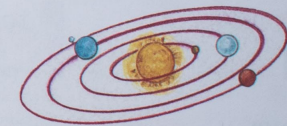


ECLIPSE

Greek science is said to have begun in 585 BC when the philosopher Thales, from Miletus, correctly predicted an eclipse of the sun by the moon.

MATHEMATICS

Pythagoras is said to have discovered the famous theorem about the sides of a right angled triangle.



EARLY THEORIES OF ASTRONOMY

The Greeks believed that the earth was the centre of the universe. They were endlessly curious about the stars and put forward many theories about how they moved through the sky. These theories were believed for 1,500 years before later scientists disproved them.

Thinkers, writers and artists

Greek philosophers asked questions such as: what is the world made of?

In trying to answer these questions, they began to study the world and the relationships between shapes, between animals and between numbers. These studies were the beginning of modern science, algebra, geometry, zoology, botany, geology and history.

Greek writers and artists studied relationships too. Playwrights wrote about the relationship of man and the gods. Artists studied the relationship between the different parts of the body, in order to create perfect beauty.



▲ A statue of the playwright, Sophocles.

φιλοσοφία philosophy

Thales (636-546 BC) was a philosopher and astrologer who thought that the universe was made of water.

Pythagoras (582-546 BC) set up a secret community in Italy where people studied. He and his followers were interested in mathematics, geometry and music.

Democritus (460-370 BC) developed the theory that the world was made of an infinite number of tiny atoms.

Socrates (469-399 BC) got people to question their religious beliefs. This was thought to be dangerous, so he was forced to kill himself by drinking hemlock.

Plato (428-348 BC) wrote important books on religion and philosophy which are still read today. Some of his ideas are found in religions such as Christianity.

Aristotle (384-322 BC) was Plato's pupil. He made a great contribution to many fields of knowledge, including philosophy, physics, biology and zoology.

θεατρον theatre

Aeschylus (525-456 BC) introduced the second actor into drama. Until now, there had only been a chorus of singers and one actor. His plays, the *Oresteia*, tell how justice came to Athens.

Sophocles (496-407 BC). His most famous play is *Oedipus*, the story of the king who, by a cruel mistake, married his own mother.

Euripides (485-406 BC). In plays such as *Hippolytus*, he made his characters more like real people than characters had been before.

Aristophanes (450-385 BC) wrote his comedies all through the wars with

Sparta, helping people to relax and laugh.

ιστορία history

Herodotus (484-425 BC) wrote the *Historiai* which means "enquiries". In these he tried for the first time to sort out fact from legend.

Thucydides (471-400 BC) wrote a long history of the war between Athens and Sparta.

Xenophon (431-354 BC) wrote several books about Socrates as well as finishing Thucydides' war history.

ποιητής poet

Homer (ninth century BC) was the first and greatest of Greek poets. His two poems the *Iliad* and the *Odyssey* were the basis of Greek education.

Hesiod (eighth century BC) was a farmer-poet. He wrote a history of the gods and a poem of advice on farming.

Sappho (610-565 BC) was a lyric poetess. She ran a school for women poets.

Pindar (518-446 BC) was most famous for the odes he wrote for the banquets of the Olympic Games winners.

τεχνη art

The Greek word *techne* means art or way of doing something. Many English words come from it.

Duris (around 580 BC). We know nothing about him apart from his wonderfully-painted red-figure pots.

Pheidias (460-429 BC) was the architect of the Parthenon (the large temple on the *acropolis* in Athens).

Praxiteles (around 350 BC). His fame was founded on his statues of Aphrodite.

The Greek Alphabet

Many words which are used today come from the ancient Greek words. You can see this by looking at the Greek alphabet below and then at the Greek words with their English meanings on the left.

Capital letter	Small letter	Name of the letter	Sound of the letter
Α	α	alpha	a (either as in <i>pat</i> or as in <i>part</i>)
Β	β	beta	b
Γ	γ	gamma	g (hard as in <i>got</i>)
Δ	δ	delta	d
Ε	ε	epsilon	e (as in <i>red</i>)
Ζ	ζ	zeta	z
Η	η	eta	e (like the <i>a</i> in <i>hay</i>)
Θ	θ	theta	th (as in <i>thin</i>)
Ι	ι	iota	i
Κ	κ	kappa	k
Λ	λ	lambda	l
Μ	μ	mu	m
Ν	ν	nu	n
Ξ	ξ	xi	x (like the <i>ks</i> sound in <i>axe</i>)
Ο	ο	omicron	o (as in <i>lot</i>)
Π	π	pi	p
Ρ	ρ	rho	rh, r
Σ	σ ζ	sigma	s
Τ	τ	tau	t
Υ	υ	upsilon	u (either as <i>oo</i> in <i>look</i> or as <i>u</i> in <i>Hugh</i>)
Φ	φ	phi	ph
Χ	χ	chi	kh
Ψ	ψ	psi	ps
Ω	ω	omega	o (as in <i>home</i>)

If ^h is written over a letter it means that the letter is pronounced with an *h*.
e.g. ἥρωσ = hero.

If ^o is written over a letter it means there is no *h* sound.
e.g. ἔρωσ = Eros.

When sigma is at the end of a word it is written Σ not σ.

4 Legacy of the Ancient Greeks

The way we live today has been influenced by people who lived at other times and in other places. The words we use, the food we eat, the books we read, the games we play, our buildings and much much more are part of the legacy of the past.

One of the most important legacies is that of Ancient Greece. Here are just a few examples of how the Ancient Greeks have influenced our world today.



The Olympics

The first Olympic Games were held in 776 BC at the Greek city of Olympia.



Theatre

The word 'theatre' is Greek. Most modern theatres follow the Greek plan.

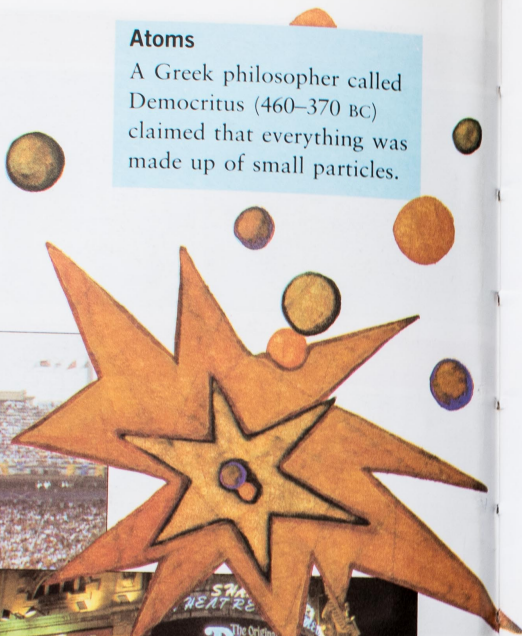


The Bible

The New Testament was first written in Greek. The word 'bible' comes from the Greek word *biblia*, which means 'books'.

Atoms

A Greek philosopher called Democritus (460–370 BC) claimed that everything was made up of small particles.



Marathon

Pheidippides ran from Athens to Sparta to ask for help against the Persians just before the Battle of Marathon (490 BC). The distance of a marathon today is 42 195 metres.



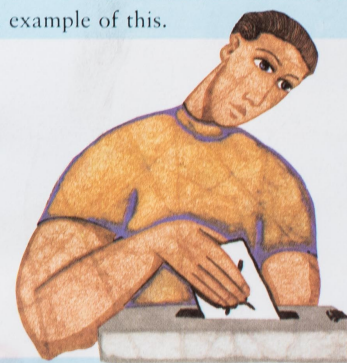
Architecture

Throughout the world, buildings have been constructed in the styles of Ancient Greece. The British Museum in London is an example of this.



Alphabet

The Ancient Greeks played an important part in the development of the alphabet. The first two letters of the Greek alphabet – alpha and beta – have given us the word 'alphabet'.



Democracy

The word 'democracy' is Greek. It means 'government by the people'.

Words

Many words that we use today were first used in Ancient Greece. Others have been made by joining together Greek words.

Word used today	Greek origin of word
orchestra	<i>orkheisthai</i> = to dance
biology (<i>bio-logy</i>)	<i>bios</i> = life <i>logos</i> = word
geology (<i>geo-logy</i>)	<i>ge</i> = earth <i>logos</i> = word
geography (<i>geo-graphy</i>)	<i>ge</i> = earth <i>graphia</i> = writing

SCHOOLS & LEARNING

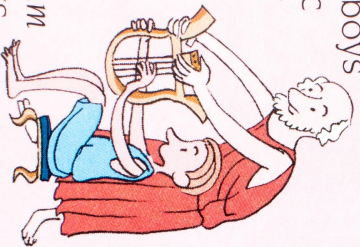
BOYS' SCHOOL

Since the purpose of education is to produce good citizens, only boys go to school. Girls are disqualified from citizenship by being girls. The luckier girls are taught at home by their mothers (assuming their mothers can read and write). All schools charge fees, so only boys with wealthy parents can attend.

3 SCHOOLS OF THOUGHT

Rather than learn everything at one school, boys go to a different school for separate subjects. At the first, a *grammatistes* teaches reading, writing and mathematics. The main difference you'll notice from today's classrooms is that instead of exercise books and calculators, boys use waxed boards and an abacus.

At the second school, boys learn poetry and music (including how to play the lyre and pipes), from a *kitharistes*. Dancing and athletics are taught by a *paidotribes*, who takes the boys to a *gymnasium* (training ground). Boys are usually accompanied to and from each school by a *paidagogos*. This paid chaperone keeps an eye on them during lessons too.



Boys start school at seven years old and continue to go until they're eighteen, when they begin military training. There's no higher education as such, but teachers known as *sophists* travel around teaching public speaking.

I HAVE AN IDEA!

If your heart sinks at the thought of a physics or history lesson, blame the Greeks. Not so long ago when people wanted answers to the eternal questions, they turned to the gods. But, from about the 6th century BC, Greek scholars have sought more practical explanations. They do this by closely observing the world around them. Their discoveries will form the basis of much that you learn in the 21st century.

Astronomy: an astronomer named Aristarchus has turned astronomy on its head by declaring that the Earth revolves around the Sun. Most Greeks believe the opposite. **History:** the Persian Wars (shh! don't mention them) showed how useful it was to know all about your enemy. This has led to a mania for note-taking by the Greeks about their own lives and others.

Mathematics: new rules are being constantly introduced, including Pythagoras' theories on triangles and circles.

Physics: inspiration even strikes in the bathroom. Archimedes was taking a bath when he noticed that the water overflowed as he got in. Seeing this, he realized that an object displaces its own volume of liquid, enabling him to calculate an object's volume.

Archimedes taking a bath

