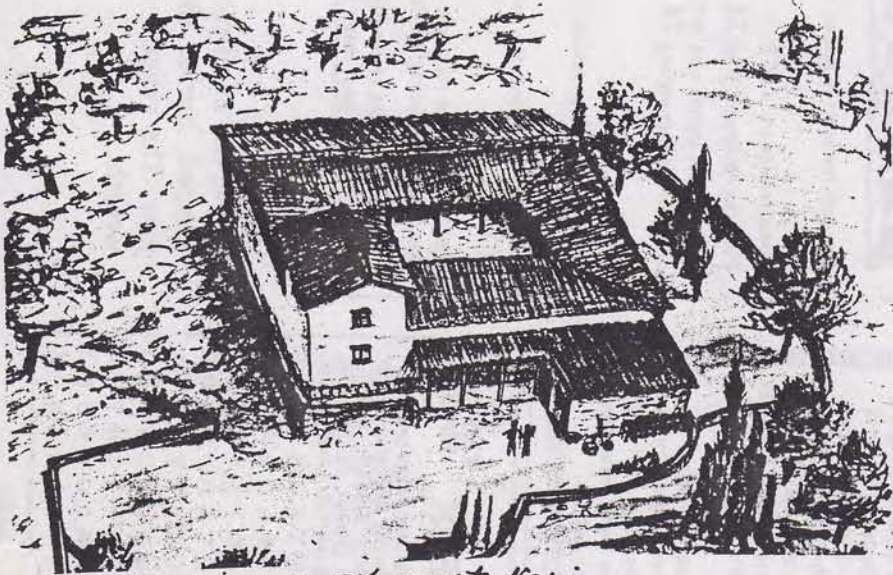
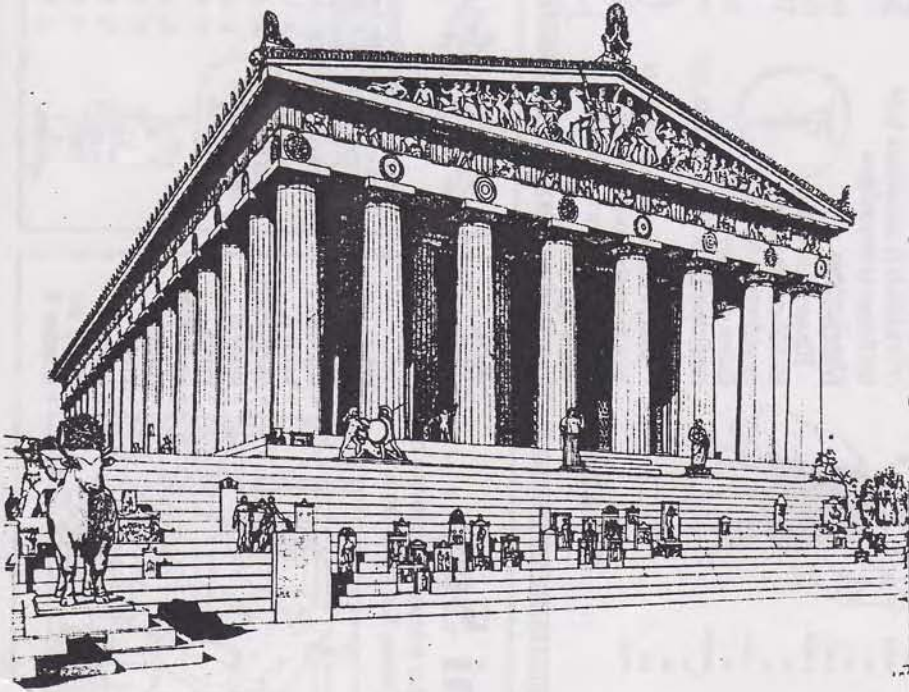


Reconstruction of the Dema House in Attica B



Reconstruction of a House at Vari



West facade of Parthenon as if restored

Pottery from Orientalizing Period



a



b



c

**Good Luck**

The horseshoe was introduced to Western culture by the Greeks in the fourth century. Even then it was regarded as a symbol of good fortune.

# Greek Everywhere

If you look around you, the Greek influence is everywhere.

## Our alphabet

The word "alphabet" comes from the first two letters in the Greek alphabet.

English is one of the many languages based on the Greek alphabet.

## The Greek alphabet

Capitals Small Letter sounds

Α	α	alpha
Β	β	beta
Γ	γ	gamma
Δ	δ	delta
Ε	ε	epsilon
Ζ	ζ	zeta
Η	η	eta
Θ	θ	theta
Ι	ι	iota
Κ	κ	kappa
Λ	λ	lambda
Μ	μ	mu
Ν	ν	nu
Ξ	ξ	xi
Ο	ο	omicron
Π	π	pi
Ρ	ρ	rho
Σ	σ	sigma
Τ	τ	tau
Υ	υ	upsilon
Φ	φ	phi
Χ	χ	chi
Ψ	ψ	psi
Ω	ω	omega

IT'S GREEK TO ME!



## Theater

Both comedies and tragedies were first performed in ancient Greece around 400 B.C. Some of the actors wore masks.

## History

Herodotus (hih-RAHD-uh-tuhs) is called the father of history. He was the first to write about the real world.

## Geometry

Squares, rectangles and circles are all part of geometry, a subject you study in math. The Greek Euclid (YOO-klidh) is considered to be the father of this subject.

## Medicine

Hippocrates (hii-PAHK-ruh-teez) is considered to be the father of modern medicine. He believed in facts, not superstitions.

Today's doctors take a pledge to care for their patients based on rules he set down thousands of years ago.



## Experiments in science

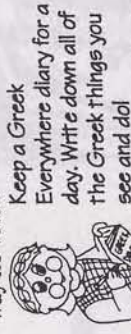
Today, we can move many things thanks to Archimedes (ahr-kuh-MEE-dees), who invented the lever and pulley. He is also called the father of experimental science.

He is famous for being the first to use the word "Eureka" after making a discovery. The word means "I've found it" in Greek.

## Justice

The idea of a trial with citizens as jurors was a Greek idea. The ancient Greek courts had at least 201 jurors and as many as 2,501.

The jury voted using a pair of bronze ballots that looked alike. One had a hollow axle for guilty. The solid axle meant not guilty. Since the juror covered the ends, nobody watching could tell which way he voted.

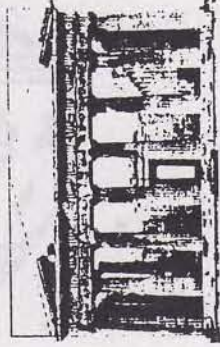


Keep a Greek Everywhere diary for a day. Write down all of the Greek things you see and do!

## Applications

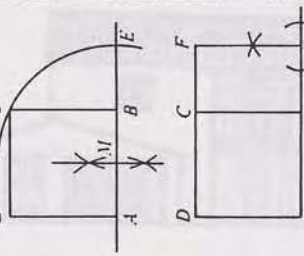
### Golden Rectangle

Even though all rectangles have four right angles, not all rectangles are similar. Some are much longer than they are wide, while others (squares) are exactly as long as they are wide. In one type of rectangle, the golden rectangle, the length divided by the width will always equal  $1 + \sqrt{5}$  about 1.6. Ancient Greek geometers and architects thought this rectangular shape was the most beautiful.



This photo of the Parthenon shows how closely the dimensions fit within a golden rectangle. The dashed line indicates the original outline of this famous Greek temple.

You can construct a golden rectangle by following the steps outlined here:



Construct square  $ABCD$ .

Find the midpoint  $M$  of  $\overline{AB}$ .

Using  $M$  as center and  $\overline{MC}$  as radius, draw an arc intersecting  $\overline{AB}$  at  $E$ .

Construct a perpendicular to  $\overline{AB}$  at point  $E$ .

Extend  $\overline{DC}$  to meet the perpendicular at  $F$ .

$AEFD$  is a golden rectangle. If we remove the original square  $ABCD$ , the remaining rectangle  $BEFC$  is also a golden rectangle.

Construct a golden rectangle, measure the sides, and divide the length by the width. Is your result about 1.6?

In the Olympic Games, Greeks ran races, jumped, hurled the biscuits, and threw the java. The reward to the victor was a coral wreath.

# Mini Spy

Mini Spy and her friends are visiting a museum with art from ancient Greece. See if you can find:

## TRY 'N FIND

- key
- word MINI
- hammer
- letter A
- toothbrush
- letter B
- peach
- exclamation mark
- mug
- letter C
- safety pin
- number 8



THE BROWN BASSET HOUNDS

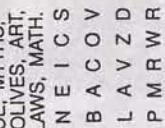
GREEK NEWS

TRY 'N FIND

Words about Greek contributions are hidden in the block below. Some words are hidden backward or diagonally. See if you can find: ALPHABET, VOCABULARY, DEMOCRACY, JUSTICE, MYTHS, ARCHITECTURE, THEATER, SPORTS, DRAMA, OLIVES, ART, WRITINGS, SCIENCE, SOCRATES, OLYMPICS, LAWS, MATH.

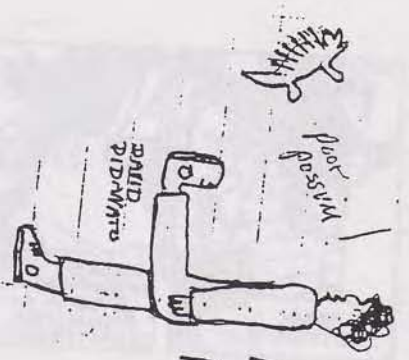
ALPHABETE CNEICS  
MATHBYRALUBACOV  
ECITSUJCTSLAVZD  
WRITINGSDHPMRWR  
SCIPMYLOEQEOXTA  
FTYSCCRATESARB M  
SEVILLOJSHTYMTA  
SWALYCARCOMEDES  
ERUTCETHCRRAKUR

GREEKS SERVE AND EAT A LOT OF OLIVES.



From The Mini Spy by Betty DeHann © 1993 Universal Press Syndicate

For a copy

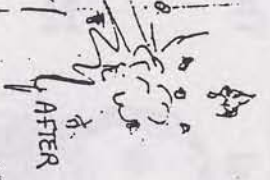


A POSSUM punt



BY MIKE JUPUS

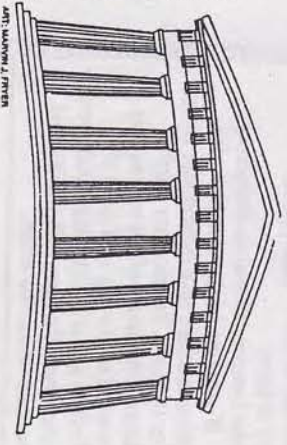
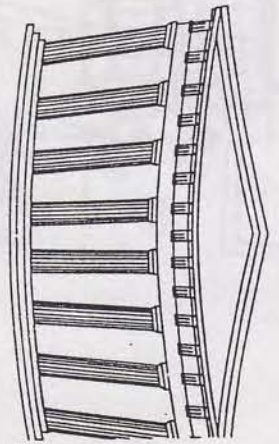
AKI



D ecoys have their use mostly in the country. To find illusion on a larger scale, look to the cities. Architects make skyscrapers seem taller than they are by tapering them upward. Mirrored glass can make a building appear to blend in with the sky. By adjusting the lighting, a designer can make a room seem either smaller or larger, whichever is desired.

Many of the tricks used by architects and designers today have been known for thousands of years. The ancient Greeks were masters of illusion. You can see that in their famous temple the Parthenon (pages 56-57). Built in Athens 2,500 years ago, the Parthenon, even in ruins, is impressive. To help make it so, the builders relied on a curious optical fact: A curved line can appear straighter than a straight line!

The major "straight lines" of the Parthenon are not straight at all. They curve. The curving is slight—only about 4 inches in 215 feet. But it results in the illusion of perfect straightness. Without the curving, the building would appear to sag in the middle.



ART: MARINA J. PETER

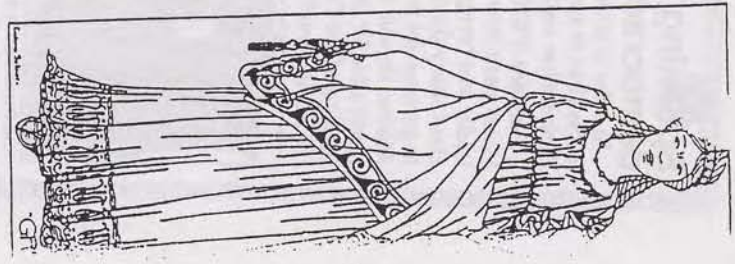
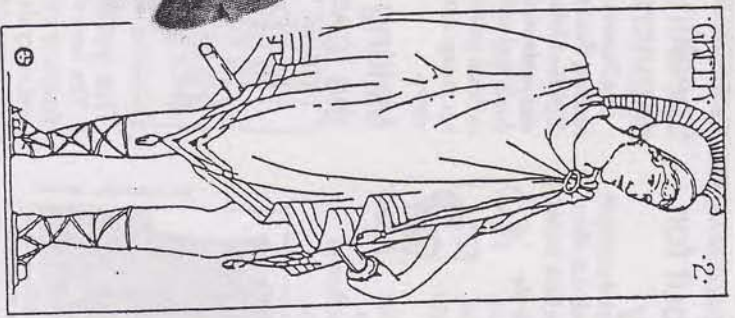
The columns of the Parthenon are not truly vertical. They angle slightly inward. The angling prevents the columns from appearing to lean outward toward the top. The angle is tiny. The columns, if extended upward, would not meet until they rose more than a mile above the base.

Modern materials enable architects to design buildings that seem to open up space rather than fill it. Mirrored glass has become a popular material for exteriors. Mirrored buildings seem lighter and airier than do buildings of brick or stone. That's because they reflect skylight and bounce it onto the street instead of filling the street with shadow. You can use illusion to change the "feel" of a room. Want your bedroom to look larger? Paint the walls white and use bright overhead lighting. The brightness will "open up" the room, making walls and ceiling seem farther away. Want the room to feel cozier? Darken the walls and light the room with small lamps. A red light bulb will add a feeling of warmth. You can have fun experimenting with lighting of different colors to suit your mood.



Wanted about

Without the optical corrections, the Parthenon would look somewhat as it does at far left. The drawing is greatly exaggerated to show the contrast more clearly. Perfectly straight lines would actually have made the Parthenon appear to sag. Truly vertical columns would have seemed to lean outward. As a whole, the Parthenon would have looked weak and humble. The drawing at left, also exaggerated, shows the effect of the architects' corrections. With the adjustments the building looks proud, sound, and upright.

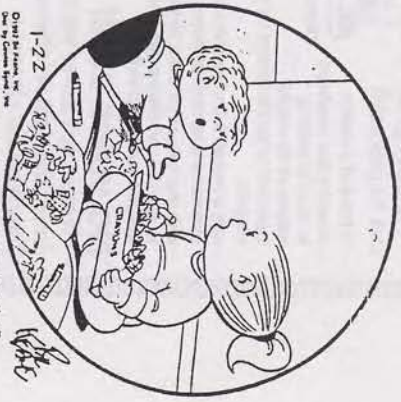


THE GREEKS carried the esthetic into every phase of life. In their costume they set a very height of perfection, in symmetry, proportion, and line. The simplest effect in the result of much care and speculation. Garments were woven by the women of the wool and flax, dyed many colors, though white was very much used. Garment of the part of the treasure of a Greek house. Because of an innate sense for the fitness of their breed, necklaces, pins, ribbons, bands and mirrors for the hair, were used in modest THE MAN: Eideon, B; mantle, B; stripes on border, YRL; thong of sandals, YRL; THE WOMAN: Dress or shawl, BGI; shawl or Amation, Y; band of ornament on shawl, Y.

Illustrations refer to the costumes of the Maxwell Club, Washington

THE FAMILY CIRCUS

By Bill Keane



"Flesh color, please, Dolly." "WHICH flesh color?"

© 1957 Bill Keane, Inc. All rights reserved.

## Speaking out for democracy

In order to protect democracy, leaders had to speak out often. Here are two important leaders:

**Pericles (PEHR-uh-kleez)** was a famous leader who brought about many changes in government in Athens. He also was responsible for the building of the Parthenon (PAHR-thuh-nahn).



Pericles

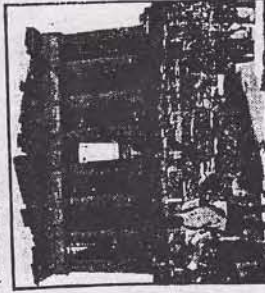


photo by Alan McRobert

The Parthenon is the temple to Athena on the Acropolis.

## Demosthenes

(dih-MAHS-thuh-nee) became one of the greatest political speakers of all time. Many stories have grown up about how he learned to speak so well.

The story goes that he practiced:

- in front of a mirror.
- down by the seashore in front of roaring waves so he would learn not to be distracted by noisy crowds.
- with a mouth full of pebbles to overcome a speech problem.
- with the help of an actor to train him to speak in whole paragraphs without taking a breath.

## No voice at all

Women and slaves were denied the rights of citizenship. They were not allowed to vote.

Next week: Read all about Greek Americans or their Greek traditions.

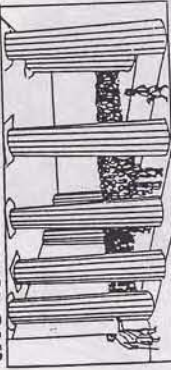
## Speaking against democracy

One famous teacher, **Socrates (SOCK-ruh-tees)**, was sentenced to death and ordered to drink poison for his unpopular views.



Socrates

## Making the laws



The meeting place of the senate.

## The senate

The laws were proposed by the senate, or **boule (boo-LAY)**. This group met every day except holidays.

It was made up of 500 citizens. Fifty were chosen from each of the tribes of Athens. They were chosen by their tribe to serve for a year.

## The citizens' assembly

The citizens' assembly met in a big, open area shaped like a theater.



The citizens' assembly, or **ekklesia (ek-LEE-zee-uh)**, met every 10 days. It was made up of any citizens who chose to attend. The assembly approved or disapproved the laws proposed by the senate.

In the later period, citizens who attended the meetings were paid. This allowed the poorer men to take part without losing a day's pay.

Athens had a direct democracy. Citizens could vote directly on matters.

We have a representative type of democracy. We elect someone to represent us. Our representative does the voting.

## The pots



Evidence from a trial may have been stored in pots of this type.



The courts had at least 201 jurors and as many as 2,501.

Speakers during a trial used a water clock to limit their time.

The pot at the higher level would be filled with water. The speaker spoke until the water ran out into the pot at the lower level.

## Exiling the powerful



Greeks counting the votes to decide if someone was to be exiled or not. This drawing is based on a painting on an ancient Greek vase.



A ballot on a broken pottery piece.

who became a threat to democracy. If someone became too powerful, citizens might vote to send him away for 10 years. To vote, they would scratch the name of the person they wanted sent away on a piece of broken pottery. If at least 6,000 votes were cast, the man with the highest number would be exiled.



Look though your paper for stories about our court's lawmakers.



IT'S ABSOLUTELY FREE.



SIGHT... KNOW WHAT'S NEAT ABOUT HAVING A GREAT IMAGINATION? WHAT? GORDO?

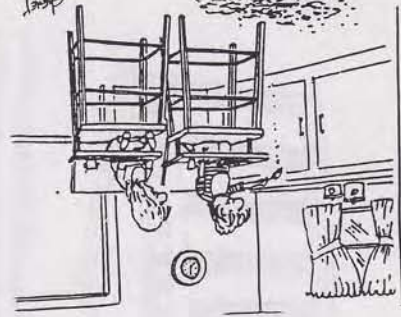


IT WOULD BE SO COOL IF WE WERE RICH MIKE. I'D BUY A PORSCHE, A RED ONE ... WITH A MEGA STEERED BRAHMS.



IT'S HOPELESS GORD THE ALL DOGS I HAFTA WAIT UNTIL NEXT YEAR. BUMMER.

"Not fast... maybe another dab of strained carrots to heighten those foreground values."



I DUNNO... I KINDA FIGURED TEACHERS SLEPT IN COFFINS ALL SUMMER.

YOU SAW MISS WORMWOOD? SHE SHOPS AT THE SUPERMARKET?

I SAW YOUR TEACHER, MISS WORMWOOD, IN THE SUPERMARKET TODAY. SHE SAID TO SNI HI.

CALVIN AND HOBES

## HOLLOW CASTING LIFE SIZE STATUES

(As in Riace warrior)

Great technical skill

Need more than a single simple mold

Weight, cost, and tendency of large masses of bronze to distort when cooling making solid bronze casting impractical

Instead *cire perdue* (lost wax) was used

Very costly also

Done several times, because statues were cast in parts

- Life sized clay model
- Clay master mold made around this, and then removed in sections
- When dry, pieces were put back together for each body part
- Layer of beeswax applied to inside of each mold
- When wax was cool, mold was removed and a hollow wax model was left
- Details could then be refined
- A final clay core was applied to the exterior of wax model
- Liquid clay core pored inside hollow wax
- Metal pins connected
- Wax melted out and molten bronze pored into mold
- As much of the clay as possible was removed from Hardened bronze
- Individual pieces were fitted together and soldered
- Smoothed, and eyes, teeth, eyelashes, attributes, spears etc. added

# Greek Pottery

## VASE SHAPES

Vases were made in different shapes according to their different uses.

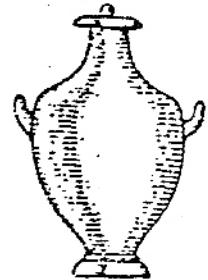
Storage containers for oil, wine, and water



AMPHORA



PELIKE

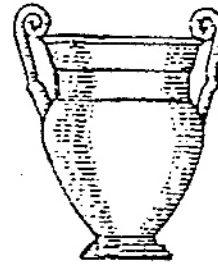


HYDRIA

Pots in which to mix wine and water



CALYX-KRATER



VOLUTE-KRATER

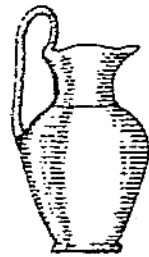


BELL-KRATER



DINOS

Jugs for pouring wine



OINOCHOE



OLPE



OINOCHOE



OLPE

Drinking cups



KYLIX



SKYPHOS



KANTHAROS



RHYTON

Perfume, oil, and cosmetic containers



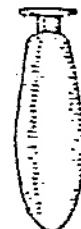
PYXIS



LEKYTHOS



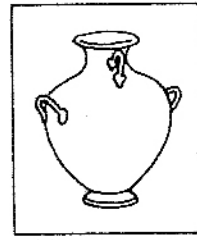
SQUAT LEKYTHOS



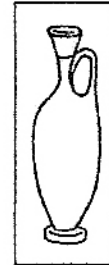
ALABASTRON

Greek Vases (major forms)

**Hydria** – “water” – water jar with 3 handles, one for carrying and two for lifting



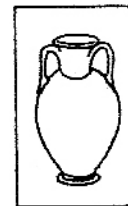
**Lekythos** – LEE-key-thoi (thos) (or lee-key-thoi) – can have a spout – oil flask used chiefly in ritual



**Krater** – “to mix” – a bowl for mixing wine and water



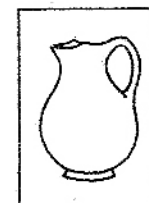
**Amphora** – AM-fo-ra (or am-FO-ra) – “to carry on both sides” – stores wine, corn, oil, honey, etc. – needs an opening large enough to admit a ladle – may have a cover (lid)



**Kylix** – KYE-like (or Kay-lix) - “to roll” – denotes that it was made on a potter’s wheel - usually used as a drinking cup

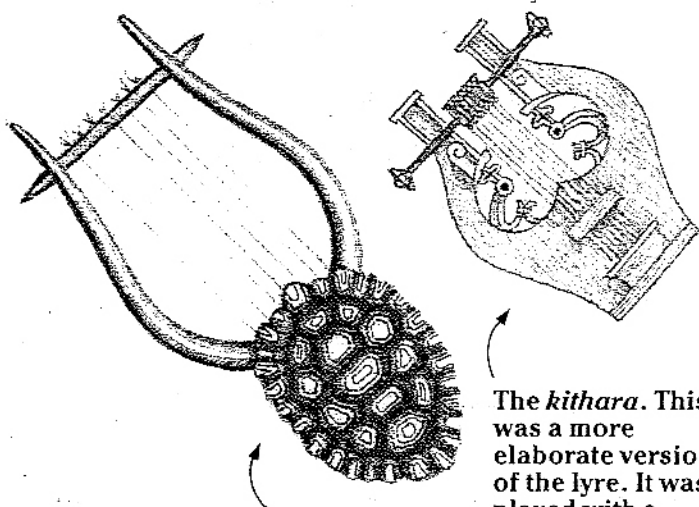


**Oenochoe** – eh-NUK-oh-ee (or e-know-KEY-knee) – “to pour wine” – a wine pitcher



## Music and Entertainment

- Music was very important to the Ancient Greeks. There were songs and music for most social events like we have today in America (birth, lament, death, love, drinking, work, and warrior songs; music was part of theatrical performances and religious festivals.)
- Music sometimes accompanied poetry.
- We do not know what the music sounded like because it wasn't normally written down. Most of the pictures of instruments are found on pottery.
- Female entertainers or courtesans called *hetaerae* (basically slaves) attended *symposia* or banquets in private homes for men only. Activities included music, dancing, acrobatics, drinking wine, political and philosophical discussions. The symposia were an important aspect of Ancient Greek social life, and they often lasted from after dinner well into the night.
- Men called *rhapsodes* made their living by reciting poetry at parties and religious festivals.
- One of the few endeavors women were allowed to partake in was music. Women also learned the arts of spinning and weaving, dancing, and caring for the sick. Their primary concern was to take care of the home and the children. Wealthy women weren't allowed out of the house very much, even to shop, the men usually went to the agora. However, families with less money relied on the women to do the shopping.
- When women did engage in social interactions it was only with other women or at family events or religious festivals.

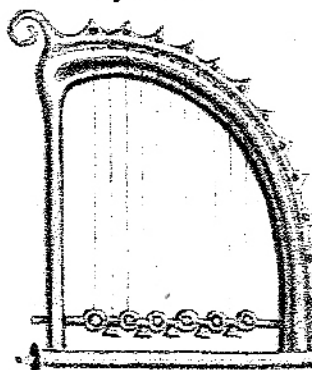


lyre. According to legend, the lyre was invented by the god Hermes. He made it from the shell of a tortoise and the hide and horns of an ox he had stolen.

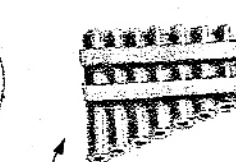
The *kithara*. This was a more elaborate version of the lyre. It was played with a plectrum and tended to be used in musical contests and by professional musicians.



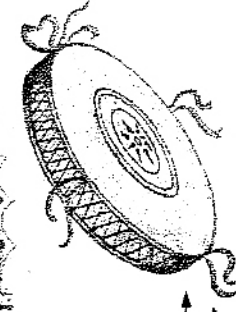
Cymbals



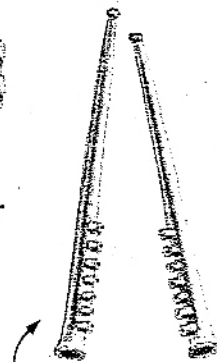
The harp



The *syrinx* or pan pipes.



The *timpanon*



The *auloi*, or double pipes. They were made of two separate pipes with a reed mouthpiece. The musician played the two pipes simultaneously.



## Art and Artifacts

- Pottery is one of the main primary source materials we have of Ancient Greek life because they decorated their pots with scenes from everyday life. Some of the information we have learned from pots is what Greeks wore and what they physically looked like, what their houses and furniture looked like, what they did for fun and entertainment, and how they worked.
- The Greeks wrote on scrolls made out of papyrus, most of these writings have decayed.
- When the Romans occupied Greece in the second century BC, they copied much of what they saw including architecture, statues, and paintings. Oddly, most of what survives today is Roman copies of Greek sculptures.

## Sculpture

- Sculptures decorated people's homes and temples, marked graves, and commemorated famous people and events.
- Sculptures were made out of limestone, marble, terracotta, wood, and bronze.
- As sculptors became more skilled in their craft, styles evolved to express more realism. Three distinct styles in sculpture history;
  - Archaic Period (800–480 BC): limited number of poses, very formal and stiff figures, mostly frontal or side view (like Egyptian statues).
  - Classical Period (480–323 BC): more attention to realism like clothing is shown with drapes and folds, people are shown in action, interest develops in portraying the female body, portraits of famous people and some facial expressions. Most sculptures were of deities, athletes, and distinguishable people.
  - Hellenistic Period (323–100 BC): A wider range of people were portrayed like children and old people, it became acceptable to sculpt death and pain, figures emphasized drama and individual qualities.

## Metalwork

- Much of the metalwork was melted down and reused so little survives. Romans also stole many pieces.
- Silver was mined by slaves, much of the silver in ancient Greece came from right outside Athens in Laurion. By 5<sup>th</sup> century BC as many as 20,000 slaves were working there.