

MEGA GREEK

2. Science



= discussion point



= written exercise



= game



= hands-on activity

Running time

Language segment: 30-45 minutes

Cultural segment: 25-35 minutes

This lesson's theme is science. The language segment introduces the class formally to the Greek alphabet, and they can have some fun writing their names before transliterating (writing in a different alphabet) some Ancient Greek words connected with science. They can also try their hand at finding modern English derivatives from these words. The cultural segment begins with a quiz on the scientific discoveries of the Ancient Greeks, whose investigations in the fields of maths, physics, biology and astronomy form the basis of modern Western scientific thinking. We then delve deeper into the discipline of astronomy, looking at constellations.

Slide 1

Introduction.

[mouse click] Your guide for today...

[mouse click] (picture of Athena)



She's wearing a war helmet, carrying a book and has an owl on her shoulder - any guesses as to who this may be?

[mouse click] Athena

As the students may remember from the last lesson, Athena is the goddess of war and wisdom, and her symbol is an owl.

[mouse click] Athena is saying "Chairete!" (*khy-ray-tay*) which means "Hello!" Students can say hello back, but have to say, "Chaire!" (*khy-ray*) because they are greeting one person (singular), whereas Athena was greeting all of us (plural).

Slide 2

Last week, we had a sneak preview of some words written in the Greek alphabet. Today we're going to use the alphabet to read and write words. Give out the Greek alphabet sheets (mg greek alphabet.pdf).



Have a look at the first few letters of the Greek alphabet. Can you work out where we get the English word 'alphabet'? [From alpha and beta, the first two letters of the Greek alphabet]

Many of the letters are the same as our modern Roman alphabet. In fact, the Romans developed their system of writing from the Greeks, and then we got our letters from the Romans, so that's not too surprising. But there are some tricky letters to watch out for

[mouse click] gamma - the capital looks a bit like a malformed 'T' and the lower case looks like a 'y'

[mouse click] eta - looks like an H

[mouse click] nu - the upper case is fine, but the lower case looks like a 'v'

[mouse click] rho - looks like a P. Just imagine it as a capital R that's lost one leg.

[mouse click] chi - looks like an X but is a 'kh' (back of the throat noise) instead

[mouse click] omega - lower case looks like 'w', but instead makes an 'oh' sound

A note on H - this is represented at the start of a word by a ' above (or just in front of) a vowel. If a word starts with a vowel but no H sound, it has a ' instead. If you have an h in the middle of a modern word or name (e.g. Rihanna), it's probably easiest to leave it out when transliterating.

Missing sounds - Ancient Greek did not have...

- soft c, use sigma σ
- qu, use κ kappa (followed by upsilon if necessary)
- v or f, use φ phi
- sh, use χ chi
- y, use υ upsilon (which is a bit y-ish anyway)
- j, use ι iota
- w, use υυ two upsilons (which is what double-u means)

Slide 3



Game - Guess who? The names of three famous people or things are going to appear on the board.

Working in pairs or individually, students use a whiteboard and marker, along with their alphabet sheets, to work out these three names before a picture confirms whether they're right.

[mouse click] Ἑλιζαβεθ

[mouse click] picture of Queen Elizabeth

[mouse click] Ἁρρυ Ποττερ

[mouse click] picture of Harry Potter

[mouse click] Μανχεστερ Ὑνιτεδ

[mouse click] picture of Manchester United

Slide 4

So, we've had a go at decoding Greek, but it's really good fun to write the letters.



First of all, let's try our names.

[mouse click] Start by copying it out a few times on a whiteboard.

[mouse click] When you've got the hang of it, copy your name in Greek onto your name badge/sticker.

Slide 5



This exercise (mg2 transliteration.pdf) gets the pupils to translate some Ancient Greek science-related words, and to think of some modern English words that come from them. Answers will appear on the slide on mouse clicks for self-marking, or there is an answer key (mg2 transliteration answerkey.pdf)

Slides 6-9

The start of the cultural segment. The scientific discoveries of the Ancient Greeks formed the basis of Western scientific enquiry, but what were they?



In teams or in pairs, pupils will guess whether the following discoveries or inventions happened in Ancient Greece or not. They should indicate their decision by drawing a big tick or cross on their team whiteboard.

slide 6

[mouse click] Clocks & timekeeping

[mouse click] Yes

[mouse click] They used water clocks (κλεψυδρα, klepsydra)

[mouse click] ...and sundials

[mouse click] the 'sticky up' part of the sundial is still called the gnomon ('interpreter')

slide 7

[mouse click] Electricity

[mouse click] No

[mouse click] But electricity gets its name from amber (ἤλεκτρον, electron), which gains a static electrical charge when rubbed

slide 8

[mouse click] The importance of healthy eating

[mouse click] Yes

[mouse click] This was proposed by Hippocrates (Ἱπποκράτης) as being a reason for illness, and not that sick people were being punished by the gods. Doctors throughout the ages have taken the Hippocratic Oath to help and not harm.

slide 9

[mouse click] Planets revolving round the sun (heliocentric theory)

[mouse click] Yes

[mouse click] Some Greek thinkers did have this idea, but it took many hundreds of years for the Western World to agree with it.

[mouse click] The word 'heliocentric' comes from Greek: helios means sun and kentron means centre or point.

The Ancient Greeks had an advanced understanding of the heavens. Astronomy was very important to the Greeks.



Why was astronomy so important? What did it allow people to do? [It allowed people to navigate ships and to travel - there was no Google Maps in those days!].

Slide 10

Let's take a closer look at the Ancient Greek science of astronomy with a map of the stars.

[mouse click] In fact, the word comes from aster (star)...

[mouse click] ...and nomos (law)

The Ancient Greeks observed the relative positions of clusters of stars (constellations). They gave these constellations names. For example...

[mouse click] Heracles (or Hercules if you're Roman) can be seen...

[mouse click] ... here

[mouse click] You can see how it's sort of the shape of a muscly hero-type man (minus the head, worryingly!)

[mouse click] Here's the (potted) story of Herakles.

Slide 11



Here are some more constellations and the myths behind them (mg2 constellations.pdf). See if you can spot all of them in the map of the night sky. An extension activity for fast-finishers: on a

plain sheet of paper, can you trace a constellation and then add artistic detail to make it look more like its mythical inspiration? Watch out, Callisto is difficult!

Mouse clicks will reveal the positions of the eight constellations.

Extension task completers may like to show their creations to the class.

Slide 12

The plenary, with Athena asking two questions related to this lesson's learning, one language-related and the other cultural.



[mouse click] Do you enjoy stories about 'Άρρη Ποττερ ? [Harry Potter - opinions may vary!]

[mouse click] Can you remember one constellation in the night sky named after a character from Greek mythology? [Ketos the Whale, Lailaps the Big Dog, Dracon the Dragon, Pegasus, Kyknos the Swan, The Dioskouroi (Twin Sons of Zeus), Orion the Hunter or Kallisto the Big Bear]