

## **TEXT TO POWERPOINT**

### **"FROM BIG BANG TO THE FIRST EUROPEAN CIVILIZATION"**

**SLIDE 1:** From Big Bang to the first European civilization. This is a PowerPoint presentation that covers our history from Big Bang to the Minoan culture of Crete, the very first European Civilization!

**SLIDE 2:** If we go back over 13 billion years we will find a universe that was extremely dense, hot and concentrated to a single point. It was around this time the universe began to expand. This expansion is called the Big Bang! Now came space, time and matter.

**SLIDE 3:** Earth (Tellus) was formed 4.54 billion years ago. Approximately one billion years after the Earth's creation, we can find traces of life: the so-called stromatolites or stromatoliths which is mostly a layer of fossil microorganisms (mainly bacteria).

540 million years ago the earth underwent a vigorous evolution of more complex multicellular organisms. This development is usually called the "Cambrian Revolution". It was during this time the first traces of different animals were formed. One reason for this development researchers believe is due to the changes in the atmosphere - from a relatively oxygen-poor but carbon dioxide-rich atmosphere to an atmosphere with higher oxygen content.

**SLIDE 4:** Historical geology is the part of geology that deals with the development of the crust of the Earth, its strata (layers) and different forms of life, from its formation to the present. The bar furthest to the right describes the geological development of Earth from and after the Cambrian Revolution.

**SLIDE 5:** The theory of evolution refers to the scientific model that describes how all life on Earth has evolved from a common original form. In 1859 the British biologist (zoologist, geologist, theologian and scientist) Charles Darwin published the book "On the Origin of Species by Means of Natural Selection, or the Preservation of Favored Races in the Struggle for Life".

**Human Origins:** What distinguishes the human-like apes from normal monkeys was bipedality! Why did we become two-legged? A major reason for this is according to the researchers climate change. We were primates that were dependent on the forest. When the forest receded it became cramped for space, and some species had to adapt to life on the ground, to the savannah and among these we probably find the ancestors of man. The split between apes and hominids took place between 5 and 8 million years ago.

**SLIDE 6:** About 3 million years ago lived Australopithecus afarensis, better known as Lucy, a small hominid from East Africa. According to some scholars Lucy was one of the first hominids who lived most of her life on the savannah, while others believe that the long arms show a life, at least to some extent in the trees. Lucy's successor all lived on the ground (on the savannah). One difference that we see from Lucy and her successors is the substantial growth of the brain. In 1.3 million years the brain size double and it is above all the memory centers and areas of awareness, planning and communication that grows. The human language probably developed during this period, and man (*Homo habilis*, to be more precise) also learns how to use fire.

*Homo habilis* ("handy man") - lived 2.5 to 1.9 million years ago. *Habilis* was short - an average of 1.3 meters long. Disproportionately long arms. The brain was slightly less than half the size of modern humans.

Homo erectus ("upright man") - lived 1.8 million years ago until just 50,000 years ago! Erectus had a larger brain volume (40% larger) than "habilis" + our body size, but was a bit heavier built. Erectus emigrated from Africa!

Homo sapiens - We have now reached the branch "Homo sapiens" ("wise man"). From the archaic "Homo sapiens" (300,000 to 125,000 years ago) the "Neanderthals" develop. Neanderthals have a larger chest and a slightly different skull than today's humans - otherwise we are quite similar! We find traces of the Neanderthals from 125,000 years until 40,000 years ago.

The Denisova child most likely belongs to the human family. In March 2010, small fragments (a finger bone and a tooth) of a child living 41,000 years ago were discovered in a cave at Denisova in the Siberian region of Altai Krai in Russia. These fragments possibly show that the child belonged to a separate, hitherto unknown species of humans (the mitochondrial DNA extracted from the fragments neither matches Neanderthal or Homo sapiens).

Homo floresiensis was a species of humans from around 95,000 years ago till as recently as 12,000 years ago. The species is much shorter than all other species in the human family, and is therefore known popularly as "hobbits" (named after the little people in JRR Tolkien's books). Bones and remnants after floresiensis is only found on the Indonesian island of Flores.

#### **SLIDE 7: DIFFERENT PERIODS OF THE STONE AGE:**

**PALEOLITHIC** or Old Stone Age started around 2.5 million years ago. It has the oldest evidence of tool manufacture. The period lasted until 10,000 BC, the end of the last ice age.

**MESOLITHIC** or Middle Stone Age is used mainly on the development in Northern Europe. The Mesolithic period range between about 10,000 BC and 4000 BC was a warm period after the last glacial period which leads to the disappearance of the Paleolithic mega fauna and the late Paleolithic hunters were forced to change their hunting patterns towards smaller animals and fishing. The new conditions of life lead to some technological innovations and the development of microliths (smaller fine chipped stone tools) sometimes with a bone or horn handle.

**NEOLITHIC** or Late Stone Age began approximately 10,000 years ago. During this period, agriculture and cattle raising developed. People now started to settle down – many became "permanent residents". The population increased and new tools were developed/invented.

**NEOLITHIC REVOLUTION:** The Neolithic Revolution is the term for the reconstruction of a society based on hunting and gathering to one based on agriculture and settlement

**THEORY:** 12 000 years ago there was a shortage of water. Nomadic peoples were forced to develop new methods to obtain food. Climate change meant people had to work harder and travel long distances in search of food. Over a period of several thousand years the nomadic people adapted to the changing environment. The hunters and gatherers began to stay where they had reliable access to water where they cultivate seeds of plants, so that the plants grew up near the residence. The farming communities came to bring another social organization - often a more pronounced hierarchical society.

#### **SLIDE 8: NEOLITHIC REVOLUTION:**

The term was first formulated by the Australian-British archaeologist Gordon Childe. It's inadequate in the sense that the transition to the Neolithic economy never occurred rapidly or in revolutionary forms. However, it is justified by the cataclysmic consequences: increased population density, permanent residence, socially stratified societies, technological development, urban development, commerce, aggression and conquest...

### **SLIDE 9 and 10: CIVILIZATION:**

The word civilization comes from the Latin *civilis*, meaning civil, related to the Latin *civis*, meaning citizen, and *civitas*, meaning city or city-state. More specifically in an older era it refers to a culture that was not “barbaric”. The Greek equivalent is “polis”.

The earliest civilizations include

- *Mesopotamia between 8000 BC-3000 BC,*
- *Egypt between 5000-3000 BC,*
- *Indus Valley between 2600-2400 BC,*
- *Northern China between 3000-2000 BC,*
- *Central America between 3000 to 500 BC*
- *Peru between 2500-500 BC*

**SLIDE 11: CIVILIZATION:** What is it that particularly that characterize a so-called civilization:

- Agriculture and food production for a larger population
- Specialization of labor (not just within agriculture but also artisans, businessmen, priests, soldiers, etc ...)
- Cities and urbanization; Some ” monumental architecture”
- Writing systems; numbers/math
- Economic and political centralization, and the exchange of goods (trade)
- Organized religion
- Military/defense (both for protection and war expeditions)
- Developing and promoting technology (like different irrigation systems)
- Social stratification with a hierarchical system including different social classes; like aristocracy (rule by nobles), theocracy (clericalism – a society ruled by priests) or bureaucracy (the administrators control the society)
- Supremacism which includes the increasing differences between men and women (with a few exceptions)

**WRITTEN SYSTEMS!** If we count the written language as an important ingredient of civilization the very first civilization occurred in "*Mesopotamia*" – in Sumer (today's Iraq between the rivers Euphrates and Tigris). There we can find the standardized written system of the so-called cuneiform (pictographs). The system consisted of approximately 600 characters and was formed by wedge-shaped indentations in soft clay tablets which then were dried or burned so that they became sustainable. A cuneiform could have three different functions depending on the context: logogram (renders a word), phonogram (renders a syllable) or determinative (classifies the written word).

**SLIDE 12:** The Egyptian civilization also had a written system, but it shows up a little bit later than the Sumerian. The Egyptian written language is called hieroglyphics (Greek = holy character), and it is a pictorial system. For several millennia, it was not known what the hieroglyphs said (or if they were trying to say anything). This was going to change after the Rosetta Stone was found by French soldiers at the town of Rosetta (Rosette in French) near Alexandria during Napoleon I's campaign in Egypt 1799 (Rosetta Stone was “taken over” by the British after the war with Napoleon and is since 1802 in the British Museum in London). The stone weighs 750 kg. It is the remaining part of a higher stone of unknown size. On the stone is the same text written in three writing systems representing two languages: Egyptian; with hieroglyphics and Demotic script, and ancient Greek written in Greek letters. The French Egyptologist Jean-François Champollion could finally in 1822 solve the system thus decipher

the hieroglyphs. Now we could understand what it was that the Egyptians had tried to tell us thousands of years earlier.

**SLIDE 13:** This is the last slide. In Crete, we find the first European Civilization. The first people who came to Crete was probably from Asia Minor or Africa. They arrived in 6000 BC and lived a (Neolithic) Stone Age life with domesticated animals. Between 3000 and 2500 BC new immigrants came from Asia Minor and the great civilizations there. These came to influence the development on Crete. From 1900 BC they built the great palaces at Knossos, Phaistos and Malia. Around 1700 BC they developed a written system now known as Linear A. This has never been deciphered. At 1700 BC several palaces were destroyed, probably by an earthquake, but they were rebuilt, this time even larger and more architecturally developed. Even cities and villages were rebuilt and soon trade flourished.

About 1,450 BC another disaster destroyed the new palaces as well and we are not really sure of the cause of this destruction. Previously it was thought that a huge volcanic eruption on the island of Santorini (Thera) destroyed the buildings on Crete, but another theory claims that the Mycenaeans invaded and destroyed the Minoan civilization. Mycenaeans had by this time taken total control over Crete and the Aegean islands. They rebuilt the Knossos palace and some minor palaces. Written texts in Mycenaean Linear B have been found at Knossos and Chania. 1450 BC marks the definite end of the Minoan civilization. Now the new civilizations would develop on the Greek mainland and eventually on the Italian peninsula - in Rome!