Science and technology

Science is a systematic enterprise that builds and organizes knowledge in the form of testable explanations and predictions about the universe. In a closely related meaning, "science" refers to the body of reliable knowledge itself, of the type that can be logically and rationally explained.

* it logically and rationally explains a phenomena

The word technology refers to the making, modification, usage, and knowledge of tools, machines, techniques, crafts, systems, and methods of organization, in order to solve a problem, improve   
a pre-existing solution to a problem, achieve a goal, handle an applied input/output relation or perform a specific function.

* anything we make and use it as our advantage

**Stone Age**

Stone Age was not only about things made of stone. People were using other materials such as bones, wood and antler as well. Crafting was mainly done by men as well as hunting, fishing and protecting the village while women were mostly gathering berries. (That’s why it’s said that women can see more colours than men.) About 1,5mya people started using fire as a source of heat, for cooking and as a protection against animals.

As regards to weapons people were using pretty much everything to beat animals. Smaller rocks, spears or even trapping pits.

Later on people moved from hunting and started fishing or growing up plants like wheat and barley. At first there were using hands, simple diggings sticks or hoes to create holes to plant seeds in. In order to store food people have created ceramic or clay pots and vessels.

In that time people used to wear wool or linen cloth but also any other animal skin.

Here on the picture you can see some common tools like grinder (grind herbs, seeds)

**Bronze Age**

Bronze Age brought improvements especially in weapons and food storage. Bronze swords and axes have become common weapons. Shield was invented during the 14th century BC but it was more used in the Iron Age. The invention of wheel was revolutionary because it allowed us to transport heavy objects. It was also used during the wars as a type of carriage. These were called chariots. The second revolutionary thing is Abacus. Abacus is considered to be the forerunner of the modern computer.

**Iron Age, Ancient and medieval technology**

Iron Age again improved all the basic tools making them lighter and stronger. It is said that sometimes it was even more valuable than gold. The biggest revolution in weapons were siege weapons like catapults which have become important for breaking walls and destroying enemies’ towers.

In ancient times Chinese invented paper, matches, compass, crossbows and gunpowder. However it took centuries to spread this technology across the world and that’s why I’ve merged Ancient and medieval technology.

**Industrial revolution**

The British industrial revolution is mainly characterized by developments in areas of mining, textile, transport. Invention of steam engine changed the way of transportation forever. It also helped as a pump to drain the mines, so that more coal could be accessed. Coal became the cheapest way of power.

In 1837 Morse developed telegraph and Morse code. That improved the speed of sending messages and it was used especially during the World War I. Morse code is still used by navy and air force in case of emergency.

**Second industrial revolution**

* **(Bridge)**

**Computers**

First generation of computers appeared during the World War II. This computer weighted about 30tons and took up to 170m2. Other computers like UNIVAC or BINAC weighted also tons and were installed in special buildings. Nowadays these buildings are called “data centres”.

Second generation fixed a big issue with reliability. Computers weren’t reliable because of vacuum tubes. This was sorted out using transistors. A transistor is a semiconductor device which may or may not conduct electricity. This state (on and off) can be expressed by 0 and 1 in binary system.

Third generation introduced integrated circuits. Thanks to this engineers were able to integrate more parts on each circuit. At this time first calculators appeared as well as the oldest operating system – Unix. This system and its basics is still used in current operating systems and the system itself is running on critical servers.

Since the beginning current fourth generation computers hasn’t changed much. The term PC was created by IBM in 1981.

**Mobile phones**

The boom started around 1980. Around this time first GSM transmitters were built in the USA. People started adapting very quickly and thanks to its comfort mobile phones became one of the fastest selling products. Until 2000 mobile phones was used to call or send an SMS. Then the speed of development increased rapidly. Simple games, WAP (very limited “internet” for mobile phones), colour display, polyphonic ringtones, cameras, Bluetooth, Wi-Fi, mp3 player or full video player etc.

**Internet**

The first network that could be considered as a first Internet was called ARPANET. It was network funded by U.S. Department of Defense. After a few years universities started to join this network and in 1981 ARPANET was expanded among universities. This network was called CSNET. In the Czech Republic similar network for universities still works (CESNET). In early 1990s first households could buy internet. The speed was only 56kbit/s which is extremely slow nowadays but back then it was useable. But even nowadays we can “experience” this speed. Mobile internet providers use FUP (Fair user policy) in order to regulate traffic in their networks. However in last few years it only works as a trick, so you spend more money on better tariff. Current internet speed is about 100-2000times faster.

**In which situation we use technology?**

PCs – office/school work, mobile phones (check emails, send sms)