

Introduction to computers

KS3 Computing

Activities

1.

Activity 1 Duration: 15 minutes

Complete the blank timeline to fill in any four important inventions in the evolution of computers in the order of its occurrence. You may include the name of the inventor or device along with its functionality. Complete the input-process-output model for a printer. List any five applications of a computer.

Simulation and modelling Robotics Biologically-inspired engineering Automation Predictive texting

Charles Babbage and Ada Lovelace: First general-purpose machine, analytical engine

Alan Turing: How the modern computer works with programs to perform different functions

Tommy Flowers: The Colossus was used by British cryptographers to decode German messages in WWII.

Konrad Zuse: The first programmable computer, Z3, data and programs were stored in punched film

Activity 1 Duration: 15 minutes

Complete the following table by listing examples of components of a computer.

End of topic questions

2.

End of topic questions

What is the difference between a general-purpose computer and a special-purpose computer? State examples for each. General-purpose computer: A general-purpose computer is designed to perform a wide range of tasks. Laptops, tablets and mobile phones are examples of general-purpose computers.

Special-purpose computer: A special-purpose computer is designed for a particular operation. For example: automatic payment in toll plazas. List the components of a computer with its functions. The input devices enables the user to enter data into the computer. The processor processes the data entered by user and generates the results. The output device displays the results. Memory stores the input, software applications and results of processing for a short period of time. The files and installed software are stored in storage devices for a long period of time. What is the difference between a memory device and storage device? Memory stores the input, software applications and results of processing for a short period of time. Whereas, the files and installed software are stored in storage devices for a long period of time.

End of topic questions

State Moore's law. Moore's law states that the number of transistors in a processor doubles every two years, and the processing speed of computers doubles every two years. The size of computers also becomes smaller over years. How is a computer used in the field of robotics? Robots are used in unmanned space probes, military, unmanned combat air vehicles, mining, healthcare and domestic tasks. What is predictive texting? Predictive texting is an application of computer wherein the computer predicts the text the user may type using first few letters of user's text and history of words typed. This application is used while sending email, searching in Google and using spreadsheets. Explain Turing's test in detail. This test involves, two humans and a computer. Human 1 communicates with a computer and human 2. Human 1 cannot see the computer, and human 2 responds only by text. Human 1 may receive responses both from the computer and human 2. If human 1 is not able to differentiate between the responses of the computer and human 2, the computer is said to be 'intelligent'.