

Main focus of activity:

- To understand the importance of computer science and technology on medical advancements.

Learning objectives:

- To see how computers and technology have changed medicine and improved outcomes for patients.
- To see how fantasy ideas of the past have been made reality by computer scientists and engineers.

Links to curriculum aims:

- **Design and Technology:** Investigate the rich history of design and technological innovation in Britain and further afield, from the Industrial Revolution onwards, as well as current innovations.
- **Science:** Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- **Literacy:** Read easily, fluently and with good understanding.
- **Literacy:** Use discussion in order to learn; they should be able to elaborate and explain clearly their understanding and ideas.
- **Literacy:** Write clearly, accurately and coherently, adapting their language and style in and for a range of contexts, purposes and audiences.

Activity outline: Discussion and background

Use the 11-Truth is stranger than fiction resource page

Discuss ideas from popular culture about computers and medicine – look at classic TV ideas - Star Trek (holographic doctors – diagnosing not being present, handheld diagnostic devices), Million Dollar Man (bionic limbs), Hollywood films – Face/Off, Mission Impossible, James Bond (where surgery changes peoples appearance), Space Camp – a miniature camera being injected and going round the body (not people being shrunk we're not there yet!). Relate to the current advances as laid out in the resource page.

Discuss why computers are so helpful to doctors – start with basic data collection, storage and reference: patient records etc, vast amounts of diagnosis data and medicine information. Take through a visit to their GP – what signs of technology do they notice – check in, records in doctor's office on computer, print out label for any prescription.

Broaden discussion up to how hospital life has changed – monitoring heart, blood pressure etc, imaging (not just x-rays anymore). Look at recent advancements. How will these affect them and their families (live longer, diseases not able to be detected before now can be earlier, medicines can be better targeted, surgery to remove or fix things far more accurate and safe).

Possible Activities:

Activity 1: Creative Writing – imagine a surgeon performing surgery using a robot – describe what they feel and see as they perform the operation. Focus on building suspense and creating tension.

Activity 2: Research and film/written work: Create a ‘Top of the Pops’ style Top 10 countdown of the most important medical advances using technology.

Plenary:

Discuss predictions for the future – what do they think could come next? In relation to the ‘bionic’ limbs predictions. Relate to the technological discussions that were held regarding whether Paralympians with prosthetic limbs such as Oscar Pistorius have an advantage over full bodied athletes. Do they think there will come a day when people ‘choose’ to have ‘bionic’ limbs to enhance abilities. Is this right or should it be allowed? Interesting topic for discussion.

Possible Extension/independent or homework learning activity:

- Debate the number 1 inventions as decided by each person/group. Put forward arguments as to why their choice should be considered the ‘most important’. Class vote to be held to see whose argument is the most convincing.