

Specification & learning objectives

<u>A Level</u>	<u>Specification point description</u>
1.5.2a	<p>The individual (moral), social (ethical) and cultural opportunities and risks of digital technology:</p> <ul style="list-style-type: none">• Computers in the workforce• Automated decision making• Artificial intelligence• Environmental effects• Censorship and the Internet• Monitor behaviour• Analyse personal information• Piracy and offensive communications• Layout, colour paradigms and character sets

Resources

PG Online textbook page ref: 249-258

Hodder textbook page ref: 241-249

[CraignDave videos for SLR 17](#)



Areas for discussion	
Driverless cars	A vehicle that is capable of sensing its environment and navigating without human input.
Manufacturing	Computer technology is used to produce items faster, more accurately and cheaper than can be done by hand.
Shopping	Online shopping has led to the closing of many high street stores. It has also helped people who find it difficult to get to a supermarket for their food shopping.
Communication	Advancements in technology now make it much easier to communicate all over the world using social media, email, texting and phone calls. Information is spreads at a much faster rate.
Employment	The advancement of computer technology has made many new jobs, but has also put many people out of work in a number of industries (for example, manufacturing). Some jobs are now automated or controlled by robots.
Developments in software	Computer software is becoming substantially more developed as time goes on – this is especially visible within the field of artificial intelligence.
Artificial Intelligence	The theory and development of computer systems able to perform tasks normally requiring human intelligence, such as visual perception, speech recognition, decision-making, and translation between languages.

Healthcare	Technology is used to monitor patients, administer drugs and diagnose illnesses. Health apps are used more regularly on smartphones than ever before.
Social networking	Many people of all ages use social networking sites to keep in touch with others. It is much easier to communicate in this way than it would be to send a card, for example.
Rating culture	Services use star or score-based rating systems to judge people's performance. For example, the taxi company Uber does this to assess the performance of their drivers, based on what their passengers suggest.
Privacy	According to a recent study, Google is within a few years of having sufficient information to be able to track the exact movements and intentions of every individual, via Google Earth and other software they are developing. Greater advancements in technology could further risk our privacy.
Cookies	File, often unique identifiers, that are sent by web servers to web browsers and which may then be sent back to the server each time the browser request a page from the server. Can be used to recognise computers when they revisit a website, track users navigating the site, etc.

Computers in the workforce	Computers have transformed the workplace and society as a whole. People and organizations have become dependent on computers to connect them to co-workers, vendors, customers and information. Although computers have provided workers countless tools for business and easier access to information nearby or abroad, there are negative effects.
Automated decision making	A decision-making process that is totally automated and excludes any human influence on the outcome. A process might still be considered solely automated if a human inputs the data to be processed, and then the decision-making is carried out by an automated system.
Environmental effects	Technology has had an impact on the environment that is both positive and negative. The use of computers affects the environment in different ways, such as energy consumption, technological waste, and the impact of remote working.
Censorship and the Internet	Internet censorship is the control or suppression of what can be accessed, published, or viewed on the Internet enacted by regulators, or on their own initiative. Individuals and organizations may engage in self-censorship for moral, religious, or business reasons, to conform to societal norms, due to intimidation, or out of fear of legal or other consequences.
Monitoring behaviour	Businesses monitor employees to improve productivity and protect corporate resources. The main intention is to prevent unacceptable behaviour in the first place and, should that effort fail, to curtail the behaviour before it can have a negative effect on the business.

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Analysing personal information	Information about you is being gathered all the time. Each time you set up an account online, your details are being harvested by someone. Every account you have could potentially be harvested, analysed and sold on to advertisers. Data mining is regularly used for this purpose.
Offensive communications	The Internet and phone communications have provided opportunities for those people who want to harass others in some way. This can include sending malicious emails or texts, following them around on the Internet via their social websites and posting hurtful messages (called 'cyber-stalking'), posting hurtful messages to people they know, pretending to be someone they are not and posting hurtful messages and posting intimate pictures of someone, perhaps from when they were in a relationship.
Layout, colour paradigms and character sets	Not all cultures use the Roman alphabet or read and write from left to right, for example. The use of colour in the design of websites, documents, programs and other types of media has a varying significance, depending upon the designer's background and origins.

Typical exam questions

The UK Government has committed to an investment in testing self-driving cars. The hope is that one day, humans will not need to drive cars or freight vehicles on the roads.

1. Discuss the ethical and moral issues and the social benefits of this, explaining whether you would recommend further investment in this research. **[12]**



Target:

Overall grade:

Minimum expectations & learning outcomes

<input type="checkbox"/>	Create an illustrated mind map or scrap book covering the nine bullet points listed in specification point 1.5.2a. Include individual, social, cultural opportunities and risks.
<input type="checkbox"/>	Answer the exam questions.

Feedback

<u>Breadth</u>	<u>Depth</u>	<u>Presentation</u>	<u>Understanding</u>
<input type="checkbox"/> All	<input type="checkbox"/> Analysed	<input type="checkbox"/> Excellent	<input type="checkbox"/> Excellent
<input type="checkbox"/> Most	<input type="checkbox"/> Explained	<input type="checkbox"/> Good	<input type="checkbox"/> Good
<input type="checkbox"/> Some	<input type="checkbox"/> Described	<input type="checkbox"/> Fair	<input type="checkbox"/> Fair
<input type="checkbox"/> Few	<input type="checkbox"/> Identified	<input type="checkbox"/> Poor	<input type="checkbox"/> Poor

Comment & action required

Reflection & Revision checklist

<u>Confidence</u>	<u>Clarification</u>
☹️ 😐 😊	Candidates need to understand what is meant by moral, social, ethical and cultural issues in relation to the use of computers.
☹️ 😐 😊	Candidates need to understand how the use of computers, and the increasing use of computers in the work force has moral, social, ethical and cultural implications and risks to a variety of people such as the employees, employers, society and organisations.
☹️ 😐 😊	Candidates need to understand how the use of computers to make decisions automatically has moral, social, ethical and cultural implications and risks to a variety of people such as those people who make the decisions, the people the decisions affect, and the need for additional collection of information to ensure the decisions are accurate and valid.
☹️ 😐 😊	Candidates need to understand how the development of artificial intelligence has moral, social, ethical and cultural impacts on a variety of people.
☹️ 😐 😊	Candidates need to understand how the environmental effects of computers (such as disposal, energy use) have moral, social, ethical and cultural implications.
☹️ 😐 😊	Candidates need to understand how the Internet and censorship on the Internet has moral, social, ethical and cultural implications.
☹️ 😐 😊	Candidates need to understand the moral, social, ethical and cultural implications of using computers to monitor behaviour (such as CCTV, tracking phone calls, GPS, monitoring emails).
☹️ 😐 😊	Candidates need to understand the moral, social, ethical and cultural implications of using computers to analyse personal information (such as the gathering, storing and analysing of medical records)
☹️ 😐 😊	Candidates need to understand how different cultures impact on the use of and creation of computers and programs. For example languages make use of different characters, and how this in turn impacts the use of character sets. Some languages read left to right, and others right to left.
☹️ 😐 😊	Candidates should understand how colours have different meanings in different cultures for example red means danger in one culture, and luck in another.
☹️ 😐 😊	Candidates need to consider how these will impact the creation of computer applications.
Additional notes	<i>In order to prepare for this section we would recommend candidates regularly keep abreast of technological developments in the news.</i>