- MMGuardian. "Should parents monitor their children's texts and phone activity?" 5 April 2022. www.mmguardian.com/ blog/should-parents-monitor-their-childrens-texts-andphone-activity.
- Null, Christopher. "I monitor my teens' electronics, and you should too." 27 January 2020. www.wired.com/story/parents-should-monitor-teens-electronics.
- Reynolds, Joel Michael. "Why parents should think twice about tracking apps for their kids." 16 May 2019. https:// theconversation.com/why-parents-should-think-twiceabout-tracking-apps-for-their-kids-114350.

7.3 Approaches to the HL pre-release and Paper 3

- Boniello, Kathianne. "Like Uber, Lyft, ride-sharing app Via accused of mistreating drivers." New York Post, 13 March 2021. https://nypost.com/2021/03/13/like-uber-ridesharing-app-via-accused-of-mistreating-drivers.
- Unions NSW. "Innovation or exploitation busting the Airtasker myth." 4 October 2016. https://apo.org.au/sites/default/files/resource-files/2016-10/apo-nid68082.pdf.

Section 8 Inquiry project – internal assessment

8.1 Developing an inquiry focus

- BBC. "Fake Walmart news release claimed it would accept cryptocurrency." 13 September 2021. www.bbc.com/news/technology-58545944.
- Hern, Alex. "TechScape: Is Apple taking a dangerous step into the unknown?" The Guardian, 11 August 2021. www. theguardian.com/technology/2021/aug/11/techscapeapple-iphone-child-abuse-images.
- Western Washington University: "Choosing a topic." https:// library.wwu.edu/lit/getting-started/topic/choosing-atopic (accessed 20 April 2022). Western Washington University: "Developing an inquiry
- Western Washington University: "Developing an inquiry question." https://library.wwu.edu/lit/getting-started/inquiry/developing-an-inquiry-question (accessed 20 April 2022).

8.3 Skills for the inquiry project

- Adobe. "How to make a documentary video." www.adobe. com/creativecloud/video/discover/how-to-make-adocumentary-video.html (accessed 20 April 2022).
- Ariella, Sky. "The most important research skills (with examples)." 17 May 2021. www.zippia.com/advice/research-skills/#what-are-research-skills.
- Desktop Documentaries. "Making documentaries." www.desktop-documentaries.com/making-documentaries.html (accessed 20 April 2022).
- Indeed. "6 ways to improve critical thinking at work." 9 June 2021. www.indeed.com/career-advice/career-development/how-to-improve-critical-thinking.
- Indeed. "Self-management skills: Definition and examples." 8 December 2021. www.indeed.com/career-advice/career-development/self-management-skills.

- International Baccalaureate. "Approaches to learning." https://xmltwo.ibo.org/publications/DP/Group0/d_0_dpatl_gui_1502_1/static/dpatl/guide-comm-skills.html (accessed 20 April 2022).
- King, Mathew. "How to Make a Documentary: Step-by-Step Guide." 24 February 2020. www.vidyard.com/blog/howto-make-a-documentary.
- MasterClass. "How to improve your research skills: 6 research tips." 18 August 2021. www.masterclass.com/articles/how-to-improve-your-research-skills#6-tips-for-improving-your-researching-skills
- improving-your-researching-skills.

 MediaSmarts. "Digital literacy fundamentals." https://
 mediasmarts.ca/digital-media-literacy/generalinformation/digital-media-literacy-fundamentals/digitalliteracy-fundamentals (accessed 20 April 2022)
- literacy-fundamentals (accessed 20 April 2022). National University of Ireland, Galway. "Reading and research shills." www.nuigalway.ie/academic-skills/ readingandresearch (accessed 20 April 2022).
- Tomorrow's Professor. "Guidelines for inquiry-based project work." https://tomprof.stanford.edu/posting/1390 (accessed 20 April 2022)
- (accessed 20 April 2022).
 Trierweiler Hudson, Hannah. "The 6 Online
 Research Skills Your Students Need." Scholastic,
 http://romerocriminaljustice.weebly.com/
 uploads/5/7/5/3/57533605/scholastic.com-the_6_online_
 research_skills_your_students_need__1_pdf (accessed 20 April 2022).
- University of British Columbia Wiki. "Presentation skills." https://wiki.ubc.ca/Presentation_Skills (accessed 20 April 2022)
- University of Wollongong, Australia. "Creating digital presentations." www.uow.edu.au/student/learning-co-op/technology-and-software/creating-digital-presentations (accessed 20 April 2022).

8.4 Tools and methodologies for the inquiry project

- Diigo, Inc. www.diigo.com (accessed 20 April 2022). NETVIBES. www.netvibes.com (accessed 20 April 2022). Nine Fives Software. https://pinboard.in (accessed 20 April 2022)
- Pandey, Prabhat and Pandey, Meenu Mmishra. "Research methodology: Tools and techniques" 2015. www. euacademic.org/BookUpload/9.pdf.
- TDR. "Research tools and techniques." http://adphealth.org/ irtoolkit/research-methods-and-data-management/ research-tools-and-techniques.html (accessed 20 April 2022).
- Top Tools for Learning. www.toptools4learning.com (accessed 20 April 2022).
- University of Wisconsin Eau Claire. "Data collection methods." https://people.uwec.edu/piercech/Research/Methods/ Data%20collection%20methods/DATA%20 COLLECTION%20METHODS.htm (accessed 20 April 2022).

8.5 Project management

Kirvan, Paul. "What are 5 backup management best practices?" 23 July 2020. https://searchdatabackup.techtarget.com/ answer/What-are-5-backup-management-best-practices.

- Kos, Blaz. "The ultimate list: 58 time management techniques and our top 10 picks (with mindmap)." 17 August 2020. www.spica.com/blog/time-management-techniques
- Mavenlink. "7 steps to create and present a resource management plan." 25 August 2020. www.mavenlink. com/blog/article/7-steps-to-create-present-a-resource-management-plan.
- Toomes, Paige. "Content management: Everything you need to know about strategically managing your content." 22 October 2021. https://gathercontent.com/blog/what-is-contentmanagement-advice-for-managing-content-strategically.
- University of St Augustine for Health Sciences. "9 proven time management techniques and tools." October 2019. www. usa.edu/blog/time-management-techniques.
- Wojno, Rebecca. "Consider this your official handbook to process management." 1 February 2022. https://monday. com/blog/project-management/process-management.

8.6 Practice inquiry project

- Basu, Tanya. "YouTube's algorithm seems to be funneling people to alt-right videos." 29 January 2020. www. technologyreview.com/2020/01/29/276000/a-study-of-youtube-comments-shows-how-its-turning-people-onto-the-alt-right.
- BBC. "Facebook tests extremist content warning messages." 2 July 2021. www.bbc.com/news/technology-57697779.
- CBS News. "How social media algorithms shape the way we get information and news." 28 October 2020. www.youtube. com/watch?v=gdG4vorlWOU.
- Lau, Theodora and Akkaraju, Uday. "When algorithms decide whose voices will be heard." 12 November 2019. https://hbr.org/2019/11/when-algorithms-decide-whose-voice-will-be-heard.
- Lim, Merlyna and Alrasheed, Ghadah. "Beyond a technical bug: Biased algorithms and moderation are censoring activists on social media." 16 May 2021. https://theconversation.com/beyond-a-technical-bug-biased-algorithms-and-moderation-are-censoring-activists-on-social-media-160669
- Suescun, Matthew. "We explored internet extremism so you won't have to." 18 May 2021. https://soundcloud.com/user-426817413/we-explored-internet-extremism.
- TRT World. "Algorithmic bias explained." 29 June 2018. www.voutube.com/watch?v=bW0Uw8omUVg.
- Wired. "Is the YouTube algorithm controlling us?" 2021. www. youtube.com/watch?y=XuORTmLhliU.

Section 9 Digital society extended essay

9.1 Approach to the digital society extended essay

Purdue OWL. "The Purdue Writing Lab." https://owl.purdue.edu (accessed 20 April 2022).

Bibliography (48)

Index

Page numbers in **bold** indicate keyword definitions

| A | anthropomorphism 183–4, 183 | authenticity 140 |
|---|--|---|
| academic integrity 462–3 accessibility 253, 288, 288 , 333–4 accountability 46, 46 , 78, 160 actuators 178, 178 addiction 138, 256 additive manufacturing 224, 224 , 252 advertising 222, 269 aging populations 313 agriculture 241–4, 307, 308–9 aims of course 17 air pollution 234, 234 algorithms 81–91, 81 | Apple 93, 97, 161, 168, 237, 294, 313, 341 application layers 111 application software 98, 98 archiving 76 see also digital archives artificial general intelligence (AGI) 148 artificial intelligence 102–3, 146–65 aging-related challenges 314 algorithms 85, 88 Amazon smart warehouses 220 assistive technology 253 automation 306, 317–18 | authenticity 140 automation 163, 163 , 188, 220–1, 305–6, 317–19 see also robots autonomous technologies 166–90 autonomous vehicles (AV) 88, 103, 103, 148, 160, 171–2, 171 , 185 auto-tagging 333 B backups (inquiry project) 447–8 bandwidth 112, 112 banking and finance 73, 122, 142, 161 battery power 97, 103, 230 behavioural competencies 261, 261 |
| algorithmic auditing 320 artificial intelligence 161 bias 87, 159, 215–16, 292–3, 320, 332 black box algorithms 88, 88, 161, 216 bubble sort algorithm 84 compression 112 criminal justice system 292–3 dilemmas 86–91 hiring 216, 320 machine learning 149, 151 migration 316 waste management 348 | bias 159, 332 data mining 62 dilemmas 159–65 health contexts 246 media 129–30, 131 robots 177, 182 semantic web 118 systems thinking 42 values and ethics 46 vision apps 334 arts, entertainment and popular culture 195–200 ASCII (American Standard Code for Information Interchange) 7 | Berners-Lee, Tim 118 bias algorithms 87, 159, 215–16, 292–3, 320, 332 artificial intelligence 159, 332 data collection 74 race and ethnicity 75, 287, 332 big data 72–4, 72 , 135, 148, 324, 330 binary 6–7, 6 biodiversity 228, 228 , 231 bio-hacking 251, 251 biometric passports 275, 275 biometrics 113, 275, 275 , 332 |
| alt text 333 Amazon 123, 215, 220–1 Amazon Alexa 97, 148, 253 Amish 208 analogue 8–9, 8 | Asimov, Isaac 179, 186 assembly languages 99–100, 99 assessment 22–3, 372–414, 427–9 assistive technology 253, 253 , 313, 333–4 association rule 85, 85 | bioprinting 252, 252 Bitcoin 122 bits 6 black box algorithms 88, 88 , 161, 216 blockchain 71–2, 71 , 223, 342, 347 borderless selling 225–6, 225 |
| analogue-to-digital converters (ADC) 8–9, 61 anonymity 69–70, 76, 123–4, 123 see also privacy | asynchronous remote learning 259, 259 augmented reality (AR) 135–6, 135 , 204, 250 authentication 69, 71, 113, 223 | Breazeal, Cynthia 185 brick and mortar stores 222, 222 bubble sort algorithm 84 business contexts 213–17 |

butterfly effect 15-16 components of a computer 96-9 \Box compression 112 bytes 7, **7** dashcams 29-30 computers 92-105, 92 data 57-80, 57 concentric diversification 214, 214 big data 72-4, 72, 135, 148, 324, caches 96, 96 concepts 28-9, 28 330 Cambridge Analytica 270-1 concepts, content and contexts (3Cs) dilemmas in 74-80 12-14, 21, 28, 56, 194 campaigning, political 268, 326-7 life cycle 63-4 conditionals 83 cancel culture 211-12, 211 representations of 68-79 capacitive touch sensors 177 confirmation bias 271, 271 storage 63, 75, 77-8 conflicts and war 274, 276-81, 323-6 CAPTCHA 147 types of 59-62 conglomerate diversification 214, 214 carbon footprint 162, 236, 236 uses of 62-3, 76 cashless society 223, 223 connections to other Diploma subjects ways to collect and organize 65-7 categorisation 66 data, information, knowledge, wisdom content 12-14, 28 celebrations 206-9 (DIKW) pyramid 58 contexts 12-14, 28 censorship 34, 34, 143, 283 data analysis 57-80 copyleft 142, 142 central processing units (CPUs) 96, 96 data analytics 72-4, 152 see also big copyright 8, 71, 98, 109, 141, 141 change 29, 31-2 cores 96 chatbots 147, 160 data breaches 70, 77 counterfeiting 275, 275 chemical sensors 177 data brokers 282, 282 COVID-19 61, 76, 125, 204, 217-18, circular economy 235 data centres 94-5, 341 225, 249, 291, 362-9 citations 429 data collection tools 440-1 creative commons licensing 142 cities, infrastructures and built data compression 112, 112 creative computing 259, 259 environments 238-41 data deletion 70, 70 creativity, activity, service (CAS) 15 citizen scientists 61, 264, 264 data erasure 70, 70 crime see cybercrime; illegal activities classification 66, 151 data formats 7 criminal justice system 87, 292-3 clients 109 data integrity 75-6, 75 critical thinking skills 259, 259 client-server networks 109, 109, 110 data masking 69-70, 69 crowd work, microwork and gig climate change 162, 340-4, 340 data matching 62, 62 economies 218-19 climate models 231-2, 341 data mining 62, 62 crowdfunding 219, 219 clock speeds 96 data protection regulations 64, 75, 76, crowdsourcing 218-19, 218, 328 cloud networks 108, 108, 341 77, 124, 162 cryptocurrency 109, 223, 223 cobalt mining 229 data reliability 75-6, 75 cryptography 68-9 cobots 185, 185 data sharing 109 cultural contexts 195-212, 290, 335 CodeCarbon 162 data storage 63, 75, 77-8, 109, 133 cultural heritage, digitization of 208 codes of conduct 48.48 data visualization 68-9, 68 customs 206-9 coding 81-91, 99-100 databases 65-6 cyber attacks 277, 282, 324 cognitive robots 182 dating apps 285 cyberbullying 76, 76, 123, 289 command terms 373-4, 379 decentralized networks 109 cybercrime 121-3, 124, 193, 282-3 communication skills (inquiry project) deep dive questions 375-6 cybernetics 156, 156 see also robots 433 deep learning 149, 152, 161, 172, 177, cyberterrorism 326 compatibility 7 220 competency development 261, 261 deepfakes 129-30, 129, 140 compilers 100 definition of 'digital' 8

Index

definition of 'digital society' 4-11 disability 253, 263, 288, 288, 295, 333-4 environmental contexts 162, 228-44, 340 - 4degaussers 70 discrimination 215, 215, 216, 285, 329-37 erasure of data 70 deletion of data 70 disinformation 140, 140, 274 ergonomic design 254, 254 demographics 286-7, 286, 311-12, distributed denial of service (DDOS) 123, 312-13 **123**, 277 ethics 29, 44-50, 74-80 destruction of data 64 distributed ledger technology 71 ethnicity 287, 287, 331-2 digital activism 326-7, 326 distribution (agricultural) 242, 242 e-trading 222, 222, 225 diversification 214, 214 digital archives 10, 76 e-waste 228, 228, 232-3, 234, 235-6 digital butterfly effect 16 diversity 215, 215, 329-37 e-waste services 233, 233 digital cameras 176, 196 domain name servers (DNS) 111, 111 exoskeletons 252, 252 digital citizenship 47-8, 47, 326-7 domain-specific Al 148, 148 expert systems 148, 148, 156 digital divide 4, 4, 231, 285, 291, 329 dominant culture 285, 285 expression 33-4 doxing 289, 289 digital footprints 14 extended essay 15, 23, 458-62 digital health care records 247, 247, 248 driverless taxis 172 extended inquiries 358-61, 362-9 digital literacy 249, 249 drones 125, 174–5, **174**, 186, 324, 343 extended-response questions 375-6, 378 digital media 127-45, 127 dynamic host configuration protocol external assessments 372-414 (DHCP) 111 digital medication 248, 248 F digital nomads 218, 218 F face-swapping technology 129-30, 140 digital pedagogies 261-2, 261 echo chambers 34, 271, 328 facial recognition 65, 75, 85, 148, 153, digital preservation 9-10, 9, 144, 208 eco-friendly cities 238 332 digital redlining 291-2, 292 e-commerce 221-2, 222, 225 fake news 130, 130, 139, 140, 274 digital revolution 4 economic contexts 213-27, 305 false positives 246, 246 digital signatures 69 ecosystems 228-9, 228, 231 families and relationships 294-8 digital society toolbox 18-21 education 258-63 fibre-optic cables 108, 110 digital surveillance 282, 282 see also election campaigns 270-1 fifth generation computing 100, 102 surveillance electronic voting systems 268, 268 file formats 7 digital systems 41-2, 54-6 Ellison, Harlan 155 financial data 59 see also banking and digital transformation 11 finance embedded computers 92, 92 digital twins 135 firewalls 113, 114, 114, 121, 283 employee organizations 219 digital warfare 277, 277 flowcharts 83.83 employment and labour digital well-being 312-13 Floyd, George 327 algorithmic bias 215-16 digitalization 11, 11 fluidity (digital subcultures) 211, 211 automation 163, 188, 220-1, digital-to-analogue converters (DAC) 8-9 305-6, 317-19 food insecurity 307-8, 307, 345 digitization 9-10, 9 data analysis 62 food safety 309 dilemmas economic contexts 217-21 form (artistic) 196, 196 algorithms 86-91 future of 317-22, 470-1 forums 198, 210, 210 artificial intelligence 159-65 inequalities 305 fraud prevention 73, 121, 122, 124 data 74-80 encoding 7 functional competencies 261, 261 digital media 138-45 encryption 68-9, 68, 114, 278 guide to resolving 49 G end effectors 178, 178 internet 120-6 gamification 221, 221, 240 energy supplies 231, 341, 343-4, 345 robots and autonomous technology gaming 96, 109, 131, 204, 223-5, 256, enterprise resource planning (ERP) 348 183-90 289, 297

| GDPR (General Data Protection | haptic interfaces 97 | intersectionality 285 |
|--|---|---|
| Regulation) 77–8, 77 , 124, 281 | hard disk drives (HDDs) 96 | medicine and health 250 |
| gender 287, 331 | hardware, computer 96–7 | mental health applications 257 |
| genre 196, 196 | hashtags 128, 128 | political contexts 272 |
| geographic information systems (GIS) | health contexts 203, 245–57, 309–10 | selfies and social media 200 |
| 240, 240 | heritage, customs and celebrations | social components of 286–90 |
| Germany 306 | 206–9 | identity theft 124, 124 , 282 |
| gig economy 203, 203 , 217, 219, 225, 318 | Herzberg, Elaine 185 high-level languages 99 | illegal activities 8, 76, 109, 121, 122, 130, 161, 185, 274, 282, 293 |
| GIGO (garbage in, garbage out) 418 | history | images |
| Girard, Michael 129 | artificial intelligence 147, 155–8 | alt text 333 |
| GitHub 155 | digital marketing 270 | auto-tagging 333–4 |
| global inequalities 304–11 | digital revolution 5–6 | image recognition 152–3, 177, 334 |
| global sourcing 226, 226 | evolution of computing 100–5 | steganography 7–8 |
| global stratification 305 | experiences of art and entertainment | immersive digital media 134–6 |
| global well-being 303-22, 355-6 | 197 | inclusivity 215, 215 |
| globalization 225–7 | history of the digital revolution 4–5 | industrial robots 166 |
| Goldberg, Ken 156 | internet 117–18 | inequalities 304–11, 331–2 |
| goods, services and currencies 221–5 | robots and autonomous technology | inference engines 148, 148 |
| Google | 179–83 | influencers 198, 198 |
| artificial intelligence 148 | home, leisure and tourism 200-6 | infographics 68 |
| energy supplies 231 | horizontal diversification 214, 214 | information 57–8, 57 |
| Google Glass 93, 250 | HTML (hyper text markup language) 117 | information warfare 277 |
| Google Meet 204, 259 | HTTP (hypertext transfer protocol) 117 | infrared sensors 176 |
| Google Play 98 | HTTPS (secure hypertext transfer | infrastructure 110, 238, 238 |
| image search 152 | protocol) 117 | in-game purchases 223 |
| Internet Saathi 319 | hubs 110, 110 | innovation 263–6, 306 |
| Lookout 334 | human error 76 | input devices 96 |
| machine learning 151 | human knowledge 258–66 | inquiry focus, developing an 421–6, |
| PageRank 84 | human rights 323–37 | 449, 451 |
| phishing 121 | hypertext 133 | inquiry methods (inquiry project) 439 |
| governance 273–6, 323–37, 356 see also laws and regulations | | inquiry process 19–21, 301, 358–61, 419–20 |
| GPS (global positioning system) 60, 93, 125, 175, 176, 239, 239 , 276, 294, 348 | identity 29, 35–6 authentication of data 71 | inquiry process document (IPD) 416–17, 427–8, 452–3 |
| graphic cards 96 | biometrics 113, 275, 332 | inguiry project 415–56 |
| graphical user interfaces (GUIs) 97 | cancel culture 212 | insourcing 226, 226 |
| graphics processing unit (GPU) 96 | digital divide 293 | integrated circuit computers 101 |
| green computing 236, 236 | education 263 | intellectual property 141, 141 , 263 |
| guidelines (online communities) 210, 210 | employment and labour 221 | internally displaced persons (IDPs) |
| 1.1 | families and relationships 298 | 315–16 |
| H | heritage, customs and celebrations | international-mindedness 15, 286, 286 |
| hacking 71, 76, 121, 121 , 161, 185, 202 | 209 | internet 107, 117–26, 117 |
| hactivism 326 326 | home technologies 202 | |

Index

| internet connectivity 249, 249 | lithium-ion batteries 97 | Microsoft |
|---|--|---|
| internet of things (IoT) 113, 118–19, 118 , | lithium-sulphur batteries 103 | assistive technology 253 |
| 125, 170, 201–2, 214, 313 | live streaming 112, 128 | Authenticator app 71 |
| internet service providers (ISPs) 107, 113, | lobbying 269 | data centre 95 |
| 116, 116 | local area networks (LANs) 107, 107 | operating systems 97 |
| internet trolls 123, 123 , 335 | location data 60, 125, 294 | Tay 160 |
| interoperability 110–11, 110 | logical reasoning (robotics) 177 | WannaCry ransomware attack 122 |
| intersectionality 285, 285 | loops 83, 84 | microtargeting 222, 222 |
| interventions 300, 300 | loot boxes 224, 224 | micro-transactions (mtx) 223, 223 |
| IP (internet protocol) address 108, 111, | Lorenz, Edward 15–16 | microworking 219, 219 |
| 111 | Lovelace, Ada 82 | migration 315–16 |
| | | milestones 5–6 |
| | M | military technology 174, 186, 252, 267, |
| Jobs, Steve 93 | MAC address 109, 109 , 111 | 274, 276–7, 324–5 |
| journalism 138–9 | machine code 99–100, 99 | misinformation 138, 138 , 143, 151, 269, |
| K | machine consciousness 148, 155, 182 | 274, 328 |
| | machine learning 73, 85, 149–54, 172, | mixed reality (MR) 135–6, 135 |
| Kanban 446 | 333, 344 | mobile service providers 115–16, 116 |
| knowledge 58, 58 | machine vision 176, 177 | modems 110, 110 |
| knowledge bases 148, 148 | mainframe computers 94–5, 94 | moderation (of online forums) 210, 210 |
| Koblin, Aaron 218 | malware (malicious software) 75, 98 , | money transfers 69 |
| I | 121, 122 | monitoring 143, 282 |
| | mapping 36, 60, 239–40 | monkey selfie 199 |
| laws and regulations 281–4 see also | mark schemes 397–400, 408–14 | Moore's law 93, 93 , 101 |
| governance | marketing 222, 269, 270 | Mori, Masahiro 184 |
| artificial intelligence 162 autonomous vehicles 172 | massive open online courses (MOOCs) | motherboards 96, 96 |
| | 260, 260 | multi-factor authentication 113, 113 |
| digital health care records 247 | media 127–45 | multiplicity 156, 156 |
| digital nomads 218 | medical diagnostics 246, 246 | multi-tenancy architecture 309 |
| against intolerance 335 | medical research 247 | manu tenancy are meetare 303 |
| robots and autonomous technology 185–7 | medicine and health 59, 71, 245–50, | N |
| workers' rights 320 | 309–10 | nanotechnology 102, 148 |
| learner profile (LP) attributes 15, 18 | megacities 312 | natural events and disasters 232, 341 |
| learning and education 258–63 | memes 129, 129 , 198 | natural language algorithms 83 |
| Leibniz, Gottfried 6 | memory 96, 98 | natural language processing 118, 147, |
| | mental health 255-7 | 152 |
| leisure 201, 203 | metadata 62, 62 | natural resources and ecosystems |
| lethal autonomous weapons systems (LAWS) 162 | meteorological data 59-60 | 228–32 |
| lidar (light detection and ranging) 176, | metropolitan area networks (MANs) | nearsourcing 226, 226 |
| 334 | 107, 107 | net neutrality 113, 113 |
| lifelong learning 470 | microchip implants 251, 251 | net partiality 113 |
| light pollution 234, 234 | microphones 8 | netiquette 47–8, 47 |
| lip-syncing 129 140 | microprocessors 102 | netizens 47, 47 |

data analytics 74, 75, 76, 77-8 network capacity 112 Р network interface cards 109 digital nomads 218 Paper 1 – approaches 380–8 network prototols 111. 111 health records 247 Paper 2 – approaches 389–400 network security 113-14, 121 and identity 36, 36 Paper 3 – approaches 401–14 internet 13 networks 106-26, 106 pattern recognition 152 neural networks 149, 152, 154-5, 162 internet of things (IoT) 119 paywalls 265, **265** laws and regulations 281–2 news media 127, 128 peace keeping 324 noise pollution 234, 234 microchip implants 251 Pearson, George 140 non-fungible tokens (NFTs) 223, 223 robots and autonomous technology pedagogy 259, 259 185 - 7non-governmental organizations (NGOs) PEEL (point, evidence, exploration, link) 273-4, **273** voting systems 268 377 non-profit organizations (NPOs) 273-4, process management (inquiry project) peer-to-peer networks (P2P) 109, 109 273 446-7 personal area networks (PANs) 106, 106 professional service robots 168, 168 non-state political actors 274 personal computers (PCs) 92-3, 92 notebooks 93 programming languages 83, 99-100, personal data 13, 66, 124, 162, 185 see also data protection regulations; privacy project management (inquiry project) personalized marketing 222 442-7 object detection systems 88 phishing 121, 121, 282 propaganda 269, 269, 274 obsolescence 144, 235 photography 196 proprietary software 98, 98 offensive media 143 planned obsolescence 235, 235, 237 proxy discrimination 292 office automation systems 213-14, 213 political contexts 143, 267-84, 326-9 proxy servers 113, 114, **114** office design 217, 217 pollution 232-7, 234, 341, 347-52 psychographic analysis 270, 270 offshoring 226, 226 popular culture 195-6, 195 psychometric surveys 216, 216 online activism 326-7 population growth 311-12 public key encryption 69 online communities 210-11, 210 pornography 143 online etiquette 47 power 37-8 online exhibitions 197, 197 QR codes 7, 363 power sources for computers 97 online forums 198, 198, 210-11, 296 practice inquiry project 448-56 qualitative data 24, 24, 59 online harassment 124, 289 practice pre-release 403-14 quantitative data 24, 24, 59 online learning 259-61, 291, 331 precision 76 quantum computing 102, 103, 103 online marketplaces 222, 222 predictive medicine 246 online relationships 296 R predictive modelling 73, 88 online shopping 32 race 75, 287, **287**, 331–2 predictive policing 292-3, 292 online voting 268, 268 radar (radio detection and ranging) 176 presentations (inquiry project) 433-5 open innovation 264, 264 radicalization 211, 211 preservation of data 64 open inquiry 21 radio networks 108, 116 presidential elections 270-1 open-source software 98, 98 RAM (Random Access Memory) 96, 96 primary data 65, 65 operating systems 97-8, 97 ransomware 122, 122, 247, 282 primary research 24-5, 24 organ printing 252, 252 real-time processing 73, 73 printer cartridges 237 outdated data 76 recidivism 293, 293 prioritization algorithm 85, 85 output devices 96 recycling 228, 228, 233 privacy outsourcing 226, 226 Reddit 198, 225 anonymity 123 ownership of media 141

redlining 291-2

| reference lists 417–18, 429 | secondary research 24–5, 24 | censorship 143 |
|--|--|---|
| Reflections on Planning and Progress | secondary storage 96, 96 | dilemmas 138–9 |
| Form (RPPF) 461–2 | Secure Socket Layer (SSL) 69, 69 | families and relationships 34, 294 |
| reformatting 10 | security | government-people relationships |
| refugees 315 | cybercrime 324–5 | 328 |
| regression algorithms 151 | data security 68–72 | influencers 198 |
| reinforced machine learning 152 | internet of things (IoT) 119, 202 | intellectual property 141 |
| relational databases 65–6, 65 | network security 113–14, 121 | memes 129 |
| reliability of data 75 | security cameras 202 | non-governmental organizations |
| religion 288, 335 | self-driving cars see autonomous vehicles | (NGOs) 274 |
| remote learning 259–60, 259 | self-driving wheelchairs 334 | online relationships 296 |
| remote working 217–18, 217 | self-employment digital platforms 318 | open innovation 264 |
| research and development (R&D) 247, | self-guided learning 260, 260 | political activism 327 |
| 247 , 263–6 | self-management skills 19, 19 , 431 | social connections 285 |
| research skills (inquiry project) 436-7 | semantic web 118 | trolls 123, 335 |
| reshoring/inshoring 226, 226 | semi-autonomous robots 178 | Web 2.0 118, 128 |
| responsibility 46, 46 | semiconductors 101 | youth cultures 210 |
| retention policies 64 | sensors 61, 96–7, 119, 170, 172, 176, | social robots 169 |
| RFID (radio-frequency identification) | 178 | social skills (inquiry project) 437 |
| 170, 251, 251 , 348 | sentiment analysis 153 | social-emotional learning 259, 259 |
| right to be forgotten 78, 124 | servers 94–5, 94 | soft power 210 |
| risk assessments 66 | service robots 167, 167 | software 97–8, 142 |
| rites of passage 207, 207 | sharing economy 219, 219 | solar power 231 |
| robots 166, 166 , 176–90 see also | singularity 148, 148 , 156 | solid pollution 234, 234 |
| automation | skills for inquiry project 430–7 | solid-state storage devices (SSDs) 96 |
| Amazon smart warehouses 220 | skills training 260 | sonar (sound navigation and ranging) |
| displacement of humans 163, | Slater, David 199 | 176 |
| 317–18 | smart cities 228, 228 , 238–9, 312 | sound cards 96 |
| friendship 295 | SMART goals 445 | sound recognition 153 |
| history 156 | smart homes 201, 201 , 313 | space 39–40 |
| robot rights 182 | smart warehouses 220 | spamming 121, 121 |
| robotic surgery 246, 246 | smart/mobile devices 93, 113, 118–19, | speech-to-text 153 |
| smart cities 239 | 125, 196, 201, 203, 248, 313 | speed of data transfer 2, 112, 112 |
| routers 110, 110 | smartwatches 201, 203, 248, 313 | sports, gaming and hobbies 73, 203-4 |
| S | Snapchat 204 | steganography 7–8 |
| | social capital 290 | stock markets 152, 225 |
| SaaS (software as a service) 308–9, 308 | social class 285, 290–3, 290 | storage of data 63, 75, 77–8, 109, 133 |
| sabotage 277, 277 | social contexts 285–98 | storyboards 444 |
| SAMR model 261–2, 261 | social engineering 121, 121 , 122 | stratification 305, 305 |
| science and technology innovation 263–6 | social media | streaming 112, 197, 197 , 204 |
| scientific data 61, 265 | addiction 138, 255 | strong AI 148, 148 |
| search algorithms 84 | authenticity 140 | subcultures 209–12, 209 , 289 |
| secondary data 65, 65 | cancel culture 211–12 | subtractive manufacturing 224, 224 |
| sees. Idai y data 05, 00 | | |

transportation 239-40, 242, 345 voice recognition 153, 176 super Al 148, 148 supercomputers 103, 231, 231 travel 201, 206 VoIP (voice over internet protocol) 116, 116 superconductors 102 trending 128, 128 voting 71, 268 superposition 103 trilateration 239, 239, 276 trolls 123, 335 supervised machine learning 151 \/\ surveillance 36, 36, 125, 143, 267, 277, Turing, Alan 146, 147, 156 WannaCry ransomware attack 122 282, 283 war 274, 276-81, 323-6 sustainable development 330-1, 338-52, **338** waste management 233, 347-52 Uber 160, 219 Sweden 180, 223, 251 water 345, 348 **UN Sustainable Development Goals** switches 110, 110 (SDGs) 330-1, 339 water pollution 234, 234 wayfinding 239-40, 239 symmetric key encryption 69 unarmed unmanned aerial vehicles (UUAVs) 324 synchronous remote learning 259, 259 weak/narrow AI 148, 148 uncanny valley 184 systems thinking 41-2, 41 wearable medical devices 246, 246, 248 unmanned aerial vehicles (UAVs) 278, wearable technology 93, 125, 203, 245, 324, 325 see also drones 248, 313 unsupervised machine learning 152 weather forecasting 343-4 tagging 66, 333 urbanization 312 Web 2.0 118, 128 talent platforms 319 URL (uniform resource locator) 117 targeted marketing 222 Web 3.0 118, 129-30 user data rights 162 techniques (artistic) 196, 196 web browsers 111, 118 user interfaces 97, 97, 148 telemedicine 246, 246, 249 website addresses 111 utility software 98, 98 terminology 19 wide area networks (WANs) 107, 107 terrorism 277-8, 277 WiFi 106, 107, 108, 114, 218 text-to-speech 153 wired networks 108 vacuum tube computers 101 theory of knowledge (TOK) 15 wireless access points (WAP) 110, 110 validation 66, 66, 75 thinking skills 432 wireless networks 106-7, 108, 108 values and ethics 44-50 see also 3D printing 224, 252 wisdom 58. 58 dilemmas throbbers 112 women in science 331 verification 66.66 time management (inquiry project) World Wide Web Consortium (W3C) vertical diversification 214. 214 445 - 6viral content 129, 140, 198, 210 time stamping 69 World Wide Web (WWW) 117-26, 117 virtual conferencing platforms 204, 204, touch sensors 177 WPA (WiFi protected access) 114 217, 249, 259 tourism 201 Wright, Dave 16 virtual networks 133 trace and track apps 125 virtual personal assistants 97, 148, 153, Χ training data 87, 149, 151, 162, 215 168, **168**, 253 XML 118 transaction processing systems 213, 213 virtual private networks (VPNs) 107, 113, transhumanism 250, 250 278 transistors 101 virtual reality exposure therapy (VRET) youth cultures 210, 210 transmission control protocol/internet 256, **256** protocol (TCP/IP) 111, 111, 117 virtual reality (VR) 134-6, 134, 204, 256 transparency 88, 88, 161, 237, 274 virtual space 40 Zoom 204, 259 Transport Layer Security (TLS) 69, 69 viruses 75, 98, 121, **121**, 122

voice activated devices 97

transport layers 111



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