

Year: 9

Subject: Science

| Term | Week | Focus | Summary | Learning Outcomes | Parental Support | Independent Learning |
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| 1A | 1 | New technology - biology | In this unit you will be looking at genetics. This includes genetically inherited disorders and how plant and animal genes can be changed to alter an organism's characteristics. | Genetics Inherited disorders Selective breeding | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/zy7vw6f/revision/1 | https://www.bbc.co.uk/bitesize/guides/ztwvk2p/revision/5 Read about the human genome project https://www.bbc.co.uk/bitesize/guides/zy7vw6f/revision/4 |
| | 2 | New technology - biology | | Genetic engineering Cloning Biotechnology | BBC Bitesize https://www.bbc.co.uk/bitesize/topics/zpffr82 https://www.bbc.co.uk/bitesize/guides/zy7vw6f/revision/5 https://www.bbc.co.uk/bitesize/guides/zy7vw6f/revision/6 | Golden rice https://kids.kiddle.co/Golden_rice Cloning https://www.bbc.co.uk/bitesize/guides/zy7vw6f/revision/7 Dolly the sheep https://kids.kiddle.co/Dolly_(sheep) |
| | 3 | New technology - biology | | Biotechnology Enzymes in industry Practical/scientific skills | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/zfjqmfr/revision/8 | |
| | 4 | New technology - biology | | Assessment Feedback | | Nanotechnology |

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| | | New technology - chemistry | You will learn about how nanoparticles make exciting new materials, with properties that make them perfect for strengthening sports equipment, protecting electronic devices, and treating disease. | Nanoparticles | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/z2rmwx/revision/1 | https://kids.kiddle.co/Nanotechnology Nanotechnology https://education.nationalgeographic.org/resource/nanotechnology/ |
| | 5 | New technology - chemistry | | Using nanoparticles Nanoparticles in medicine Nanoparticle safety | | |
| | 6 | New technology - chemistry | | Cars - pros and cons (combustion) New fuels Cleaning up exhausts | BBC Bitesize https://www.bbc.co.uk/bitesize/articles/zcwxcj6 https://www.bbc.co.uk/bitesize/articles/ztwx6g8 https://www.bbc.co.uk/bitesize/guides/zsmn4qt/revision/8 | Pollution - article https://www.nationalgeographic.org/encyclopedia/pollution/ |
| | 7 | New technology - chemistry | | Hybrid electric cars Practical/scientific skills Assessment | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/zpkvbqt/revision/4 | The cars of the future https://www.nationalgeographic.com/culture/article/hybrid-full-electric-inside-tomorrows-cars |
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| 1B | 1 | New technology - chemistry | | Feedback | | |

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| | | New technology - physics | In this unit you will learn about how technology, from mobile phones to hospitals, has changed the way that we live our lives. | Your phone Your house | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/z7qsydm/revision/8 https://www.bbc.co.uk/bitesize/guides/z2gjt4/revision/3 | Video - the future of communication https://www.youtube.com/watch?v=VKalGBMB4us Video - Earth friendly homes https://www.youtube.com/watch?v=6P6zs9fKDU0 Article - the individual people making their homes climate friendly https://www.nationalgeographic.com/environment/article/paid-content-the-everyday-people-making-their-homes-climate-friendly |
| 2 | | New technology - physics | | Intensive care Your hospital - seeing inside Your sports | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/z8tx3k7/revision/4 https://www.bbc.co.uk/bitesize/guides/z6k6cqt/revision/4 | Careers - nursing https://www.bbc.co.uk/bitesize/articles/z6by7nb |
| 3 | | New technology - physics | | Your planet Practical/scientific skills Assessment | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/zdx4t39/revision/2 | Article - Alien hunters detect mysterious radio signal from nearby star https://www.nationalgeographic.com/science/article/alien-hunters-detect-mysterious-radio-signal-from-nearby-star |

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| 4 | New technology - physics Turning points in biology | You will study how you can protect yourself from disease through immunisation and treat conditions using antibiotics. | Feedback Vaccines Vaccines | BBC Bitesize https://www.bbc.co.uk/bitesize/articles/z2kvydm | Treating, curing and preventing disease https://www.bbc.co.uk/bitesize/guides/z8fkmsg/revision/1 Video - the history of vaccines https://www.youtube.com/watch?v=VK7tr3AMia0 |
| 5 | Turning points in biology | | Antibiotics Antibiotics DNA | BBC Bitesize https://www.bbc.co.uk/bitesize/articles/zc8txbk | Key scientists from history https://www.bbc.co.uk/bitesize/articles/zf7g4qt |
| 6 | Turning points in biology | | Charles Darwin Preventing extinction Practical/scientific skills | BBC Bitesize https://www.bbc.co.uk/bitesize/articles/zfbjxg8 | Charles Darwin in St Helena https://sthelenaisland.info/famous-visitors/charles-darwin/ |
| 7 | Turning points in biology Turning points in chemistry | You will learn about vital turning points in chemistry - how did scientists find out what's in an atom, and what fossils tell us about the history of life on Earth. | Assessment Feedback Evidence for atoms | BBC Bitesize https://www.bbc.co.uk/bitesize/topics/zstp34j | Rutherford's atomic model discoveries https://www.bbc.co.uk/bitesize/guides/zctbdxs/revision/2#:~:text=Rutherford%20had%20discovered%20the%20nucl |

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| | | | | | | ear.was%20not%20made%20by%20Rutherford. Research suggestion: Was Rutherford the one who did the work? Simulation - build an atom https://phet.colorado.edu/en/simulation/build-an-atom |
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| 2A | 1 | Turning points in chemistry | | Looking into atoms Discovering the periodic table Lessons from fossils | BBC Bitesize https://www.bbc.co.uk/bitesize/topics/zv9nhcw | Dmitri Mendeleev https://kids.kiddle.co/Dmitri_Mendeleev |
| | 2 | Turning points in chemistry | | The oldest primate Practical/scientific skills Assessment | BBC Bitesize https://www.bbc.co.uk/bitesize/articles/z9qs4qt https://www.bbc.co.uk/bitesize/articles/z2ym2p3 | Video - formation of fossils https://www.nhm.ac.uk/discover/how-are-fossils-formed.html Article - what can fossils tell us? https://learningzone.oumnh.ox.ac.uk/what-can-fossils-tell-us |
| | 3 | Turning points in chemistry Turning points in physics | You will learn about how our ideas about the Universe have changed, and how | Feedback Discovering the universe Discovering the universe | BBC Bitesize https://www.bbc.co.uk/bitesize/topics/z8c9q6f | NASA: https://spaceplace.nasa.gov/big-bang/#:~:text=The%20big |

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| | | | people discovered electromagnetism and radioactivity. | | | %20bang%20is%20how.and%20it%20is%20still%20stretching! https://science.nasa.gov/universe/the-big-bang/ |
| 4 | Turning points in physics | | | The Big Bang Spacecraft and satellites Mission to the Moon | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/z7hpkmn/revision/4 | NASA https://www.nasa.gov/human-s-in-space/artemis/#:~:text=With%20NASA's%20Artemis%20campaign%2C%20we,term%20presence%20on%20the%20Moon. https://worldview.earthdata.nasa.gov/ |
| 5 | Turning points in physics | | | Radioactivity Radioactivity Electromagnetism | BBC Bitesize https://www.bbc.co.uk/bitesize/topics/zxnvv9q https://www.bbc.co.uk/bitesize/guides/z32f4qt/revision/1 | NASA https://science.nasa.gov/ems/01_intro/ |
| 6 | Turning points in physics | | | Electromagnetism Practical/scientific skills Assessment | | |
| 7 | Turning points in physics | | | Feedback | | |
| | Detection - biology | | In this unit you will find out how forensic scientists help to solve crimes through the | Microscopy Fingerprinting | | |

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| | | | analysis of evidence found at the scene of a crime. | | | |
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| 2B | 1 | Detection - biology | | DNA fingerprinting Blood typing Time of death | BBC Bitesize https://www.bbc.co.uk/bitesize/guides/znm66v4/revision/4 Blood - https://www.bbc.co.uk/bitesize/articles/ztj4g7h | Careers in forensic science https://www.bbc.co.uk/bitesize/articles/z4ysb7h History - https://www.bbc.co.uk/bitesize/guides/zwhd8hv/revision/8 |
| | 2 | Detection - biology | | Pathology Practical/scientific skills Assessment | Revision - cells https://www.bbc.co.uk/bitesize/articles/zkm7wnb | Are our fingerprints really unique? https://www.bbc.com/news/technology-67944537 |
| | 3 | Detection - biology Detection - chemistry | You will find out how to use chemistry to help solve crimes. | Feedback Break-in Smelly problem | DNA - https://www.bbc.co.uk/bitesize/articles/zc8txbk | Careers in law https://www.bbc.co.uk/bitesize/articles/zkmvnrdr |
| | 4 | Detection - chemistry | | Message in a bottle Blood alcohol Body | Revision - chromatography https://www.bbc.co.uk/bitesize/articles/zkqjjsq | Careers in the police https://www.bbc.co.uk/bitesize/articles/zb3gmfr |
| | 5 | Detection - chemistry | | Clues in the carpet A week in court Practical/scientific skills | Revision - polymers/composites https://www.bbc.co.uk/bitesize/articles/zyfydm | Careers in chemical analysis https://www.prospects.ac.uk/job-profiles/analytical-chemist |
| | 6 | Detection - chemistry | | Assessment | | |

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| | | Detection - physics | You will learn about how scientists look for aliens, new particles, and how GPS works. | Feedback Detecting planets | Revision - the Solar System https://www.bbc.co.uk/bitesize/articles/zxyw7yc | Aliens? https://www.nationalgeographic.com/science/article/dark-forest-theory-alien-life |
| | 7 | Detection - physics | | Detecting alien life Detecting position Detecting messages | Launching satellites https://www.bbc.co.uk/teach/class-clips-video/articles/zvfy8xs EM spectrum https://www.bbc.co.uk/bitesize/articles/zq26nk7 | Aliens? https://www.nationalgeographic.com/science/article/alien-life-extraterrestrial-purple-world Aliens? https://www.nationalgeographic.com/premium/article/hunt-for-alien-life-exoplanet-just-became-top-suspect |
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| 3A | 1 | Detection - physics | | Detecting particles Practical/scientific skills Assessment | Detecting magnetic fields https://www.bbc.co.uk/bitesize/guides/z3s4qhv/revision/3 Detecting radiation https://www.bbc.co.uk/bitesize/guides/zt9s2nb/revision/6 | UFOs https://www.nationalgeographic.com/science/article/ufo-alien-spacecraft-investigation-timeline |
| | 2 | Detection - physics Revision of KS3 topics | | Feedback | | General extra reading/resources for KS3 science: |

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| | | | | | <p>KS3 Biology - https://www.bbc.co.uk/bitesize/subjects/z4882hv</p> | <p>Scientific journals for young people. The abstract is kind of like the blurb of a book - read it first to see if you are interested and then read the whole article. https://kids.frontiersin.org/ https://www.sciencejournalforkids.org/</p> |
| 3 | <p>Revision of KS3 topics</p> <p>End of KS3 assessment - biology</p> | | | | <p>KS3 Chemistry - https://www.bbc.co.uk/bitesize/subjects/znxyrd</p> <p>KS3 Physics https://www.bbc.co.uk/bitesize/subjects/zh2xsbk</p> | <p>Other interesting science news/websites:</p> <p>https://spaceplace.nasa.gov/ https://www.snexplores.org/all-stories https://www.nationalgeographic.com/science/ https://www.natgeokids.com/uk/category/discover/science/</p> |
| 4 | End of KS3 assessment - chemistry and physics | | | | | |
| 5 | Working scientifically/GCSE prep | You will carry out science investigations to help you to prepare for GCSE, including testing for ions, metal displacement reactions, making salts, electrical circuits and the effects of exercise on the body. | | | | <p>Biology GCSE practical prep https://www.youtube.com/watch?v=SX6mow1AExI&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=1&pp=iAQB https://www.youtube.com/watch?v=oiexYuQm_xE&list=PLAd0MSIZBSsHv1pioWRdg-p</p> |

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| | | | | | | <p>https://www.youtube.com/watch?v=RhMOCxXcDrQ&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=2&pp=iAQB</p> <p>https://www.youtube.com/watch?v=id0aO_OdFwA&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=3&pp=iAQB</p> <p>https://www.youtube.com/watch?v=sl2Dp5fNdDY&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=4&pp=iAQB</p> <p>https://www.youtube.com/watch?v=si2Dp5fNdDY&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=5&pp=iAQB</p> <p>https://www.youtube.com/watch?v=zSx83-D-LYE&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=6&pp=iAQB</p> <p>https://www.youtube.com/watch?v=akMLGbNA0gE&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=7&pp=iAQB</p> <p>https://www.youtube.com/watch?v=8Yqbu56lmXk&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=8&pp=iAQB</p> <p>https://www.youtube.com/watch?v=Ws5qVXYHRnQ&list=PLAd0MSIZBSsHv1pioWRdg-pZCWTo84cdP&index=9&pp=iAQB</p> |
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| 6 | Working scientifically/GCSE prep | | | | | <p>Chemistry GCSE practical prep:</p> <p>https://www.youtube.com/watch?v=glOMlwBoe_4&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=1&pp=iAQB</p> <p>https://www.youtube.com/watch?v=pnTGNAfu6GE&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=2&pp=iAQB</p> <p>https://www.youtube.com/watch?v=GI6LVI7oAIU&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=3&pp=iAQB</p> <p>https://www.youtube.com/watch?v=ssa3wh3RNt0&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=4&pp=iAQB</p> <p>https://www.youtube.com/watch?v=tKxcQYZ2YH8&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=5&pp=iAQB</p> <p>https://www.youtube.com/watch?v=tCHE_7QeRUc&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=6&pp=iAQB</p> <p>https://www.youtube.com/watch?v=vn3Rx3g1VPk&list=PLAd0MSIZBSsEygAZyDRkK0</p> |

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| | | | | | | PgQZ6uiC98F&index=7&pp=iAQB https://www.youtube.com/watch?v=fCZztwJmAl0&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=8&pp=iAQB https://www.youtube.com/watch?v=UGHsbTEBvA&list=PLAd0MSIZBSsEygAZyDRkK0PgQZ6uiC98F&index=9&pp=iAQB |
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| 3B | 1 | Working scientifically/GCSE prep | | | | Physics GCSE practical prep https://www.youtube.com/watch?v=MUy1o4ogCvw&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=1&pp=iAQB https://www.youtube.com/watch?v=LFwio38EK9s&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=2&pp=iAQB https://www.youtube.com/watch?v=tiqiN3y1ze4&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=3&pp=iAQB https://www.youtube.com/watch?v=J9-J0cFQCrE&list=PLAd0MSIZBSsGNWKdHJdQYIn |

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| | | | | | | <p>dKI3HZUrSB&index=4&pp=iAQB https://www.youtube.com/watch?v=lvqu6JAbaKc&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=5&pp=iAQB https://www.youtube.com/watch?v=loeRLKNeUsc&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=6&pp=iAQB https://www.youtube.com/watch?v=OY0IXHPo_nM&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=7&pp=iAQB https://www.youtube.com/watch?v=m_3JrA-sDEg&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=8&pp=iAQB https://www.youtube.com/watch?v=51mSWRfAsAw&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=9&pp=iAQB https://www.youtube.com/watch?v=ksPfzUjMbBk&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=10&pp=iAQB https://www.youtube.com/watch?v=QQCJeAqBumE&list=PLAd0MSIZBSsGNWKdHJdQYIndKI3HZUrSB&index=11&pp=iAQB</p> |
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| 2 | Working scientifically/GCSE prep | | | | | General GCSE practical preparation https://www.youtube.com/watch?v=LezXeEssD4g&list=PLAd0MSIZBSsGNWKdHJdQYlndKi3HZUrSB&index=12&pp=iAQB |
| 3 | Working scientifically/GCSE prep | | | | | |
| 4 | Working scientifically/GCSE prep | | | | | |
| 5 | Working scientifically/GCSE prep | | | | | |
| 6 | Working scientifically/GCSE prep | | | | | |
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