



St Benet Biscop Sixth Form

Personal Development

Biology

1. MOOCs (Massive Open Online Courses)

Defeating Malaria, from the Genes to the globe: Harvard University

Through foundational lectures, case studies, SimState scenarios, and interviews with experts, MalariaX provides learners with a toolbox of knowledge and analytical skills to understand one of the deadliest diseases ever known. By exploring multidisciplinary aspects of malaria, this course demonstrates how understanding social and economic factors is crucial to developing a successful integrated approach to national and local malaria eradication efforts. Learners will be guided through the analysis of real-world data and its effective use in the development of context-specific interventions to achieve sustainable and equitable impact against malaria.

The multi scale brain: edx.org

This course will take you through the latest data, models, and techniques for investigating the different levels of the brain. We will show how we can put the pieces together and attain new insights and derive new theories. With contributions from more than 10 international neuroscientists from six different research institutions, the MOOC gives a broad overview of the latest tools and techniques for neuroinformatic, analysis, modelling, and simulation.

Medical terminology: edx.org

Medicine has a very distinct and highly specialized language. It is necessary for any student wishing to pursue a successful career in the medical field to acquire comprehension in this system of communication, including Allied Healthcare professionals. Learners will receive thorough instruction in developing fluency with medical terms. Medical vocabulary will be taught with specific emphasis on root (or stem words), prefixes, suffixes, and abbreviations. By the end of this course learners will be expected to have a basic comprehension of medical terms and be able to communicate accurately to their peers in the field. Terms associated with anatomy, physiology, pathology, and diagnostic tests of different systems are discussed but no previous knowledge of these topics is necessary.

Chicken behaviour and welfare: University of Edinburgh

This course explains the general principles of chicken behaviour and welfare, and the behavioural and physiological indicators that can be used to assess welfare in chickens kept in hobby flocks through to commercial farms. The focus is primarily on laying hens and meat chickens (broilers) although many of the principles are relevant to other types of poultry.

*To seek wholeness through faith, quest and learning, to become what
God intends us to be.*



Genetic models for animal breeding: edx.org

Animal breeding involves the selective breeding of domestic animals with the intention to improve desirable (and heritable) qualities in the next generation. This course introduces the steps required to design a program for breeding animals and teaches the genetic and statistical concepts that are needed to build a solid breeding program. In this course you will learn how an animal breeder balances the need for improving desirable qualities of the animals with the need for genetic diversity and long sustainability of the program. The scientific concepts in genetics that are applied in animal breeding will be explained and you will learn to apply the models and computational methods that are used in animal breeding.

Essentials of Genomics and Biomedical informatics: edx.org

This course is a product of a decade of a collaborative effort between researchers from the computational biology program at Bar-Ilan University, and clinicians from Sheba Medical Centre to develop and deliver an extended curriculum in genomics and biomedical informatics.

2. Books

The Immortal Life of Henrietta Lacks. Skloot, R.

Her name was Henrietta Lacks, but scientists know her as HeLa. Born a poor black tobacco farmer, her cancer cells – taken without her knowledge – became a multimillion-dollar industry and one of the most important tools in medicine.

The Serpent's Promise. Jones, S

The Bible was the first scientific textbook of all; and it got some things right (and plenty more wrong). Steve Jones' new book rewrites it in the light of modern science. Are we all descended from a single couple, a real-life Adam and Eve? Was the Bible's great flood really a memory of the end of the Ice Age? Will we ever get back to Methuselah given that British life expectancy is still rising by six hours a day, every day.

The selfish Gene. Dawkins, R

This million-copy bestseller is universally acclaimed and translated into over twenty languages. "The sort of popular science writing that makes the reader feel like a genius." - "New York Times." "This important book could hardly be more exciting." - "The Economist." "Learned, witty, and very well written...exhilaratingly good." - "Spectator." "The reader will come away with a clear understanding of kin selection, evolutionary stable strategies, and evolutionary theories of animal behaviour.

Why elephants have big ears. Lavers, C

In a lively exploration of the animal kingdom, a scientist reveals how a boyhood interest in tadpoles and dinosaurs and a curiosity about biology and ecology grew into a lifelong career in science and speculates about some of the most baffling questions about the natural world.

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Immunology – A comparative approach. Turner, RJ

How good a representative is the immune system of a laboratory mouse? How may technical obstacles in one immunological model be bypassed by using another? How much progress has been made in the study of defence mechanisms in plants and animals of commercial importance? The answers to these and numerous other questions regarding the immunological similarities which can be detected across various orders, classes, phyla and kingdoms are found in this book. Provides pertinent information on the advances, opportunities and challenges in comparative work.

3. Podcasts

Sciencemag.org

Each week on the Science Podcast, host Sarah Crespi delves into the latest scientific discoveries with researchers and news writers from around the globe.

The Naked Scientists

The Naked Scientists flagship science show, includes the latest science news, interviews with top scientists, hands-on science experiments and answers to your science questions.

The infinite monkey cage

Consistently topping the UK's science and medicine podcast chart, this extended version of the Radio 4 programme features expert guests and more irreverent contributors discussing big scientific questions or news. Witty, fun and informative, it is presented by physicist Brian Cox and comedian Robin Ince.

Radiolab

Known for its slick editing, Radiolab stitches together deep reportage, storytelling, interviews, archive sound clips and guest discussion to create revealing documentaries and compelling stories. Recent episodes have looked at the transmissibility of so-called 'devil tumours' in Tasmanian devils and the researchers who first cultured Henrietta Lacks' cells.

Waking up with Sam Harris

Neuroscientist, philosopher and best-selling author Sam Harris tries to make sense of societal trends and events – from Donald Trump and ISIS to futurology and artificial consciousness – by looking at things from an evolutionary and neuroscience perspective. The podcast won a 2017 Webby Award for best podcast in the science and education category.



4. Websites

<https://www.youtube.com/channel/UCxUHVv2k31uTOiCm4njuRfQ> - McGraw-Hill animations are excellent at explaining complex concepts.

www.s-cool.co.uk – a revision site with animated pictures and questions.

www.biologymad.co.uk - an excellent site with lots of useful links.

www.mrothery.co.uk - another excellent site.

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