

Physics Resources

	Additional Reading	
KS5	Worcester College Bookshelf Project- this project involves sharing books that people have enjoyed about their subject. This list is regularly updated so look out for relevant texts	https://www.worc.ox.ac.uk/applying/access-and-outreach/resources/bookshelf
KS5	<p>From Cambridge University Reading List for Natural Sciences;</p> <p>Physics no specific texts are recommended however this series of lectures is https://www.microsoft.com/en-us/research/project/tuva-richard-feynman/?from=http%3A%2F%2Fresearch.microsoft.com%2Fapps%2Ftools%2Ftuva%2Fin</p> <p>Materials Science</p> <p>Made to Measure: New Materials for the C21st Century Ball, P, Princeton University Press</p> <p>New Science of Strong Materials Gordon, J.E, Penguin</p> <p>Stuff Matters Miodownik, N, Penguin</p>	https://www.natsci.tripos.cam.ac.uk/prospective-students/reading
KS5	Staircase 12- reading suggestions and resources from current undergraduates	https://www.univ.ox.ac.uk/applying-to-univ/reading-bank/?category=humanities&subcategory=english
	Websites	

KS2-5	Explore some of the big questions that are relevant to us all such as; Is a robot a person? Could you survive a natural disaster? Can time travel ever be possible? Do we see colour the same? Are explosions always destructive	Oxplore.org
ALL	News/activities, puzzles, experiments and database of 4000 physics websites – designed to engage all ages with Physics	http://www.physics.org/index.asp
KS2-4	Purpose games educational games related to Physics	https://www.purposegames.com/playlist-tag/physics
KS2-4	Planet 42 Physics Games	http://planeta42.com/physics/
KS2-4	Science Kids Physics- facts, resources and games, experiments and lesson plans	http://www.sciencekids.co.nz/sciencefacts/physics.html
KS4-5	Physics Mastery – free for duration of COVID 19	https://www.pearsonmylabandmastering.com/northamerica/masteringphysics/
KS3	BBC Bitesize KS3 Physics	https://www.bbc.co.uk/bitesize/subjects/zh2xsbk
KS4	BBC Bitesize GCSE Physics	https://www.bbc.co.uk/bitesize/subjects/zpm6fg8
KS4/5	Free on line learning GCSE and A Level Physics	https://app.senecalearning.com/courses?Subject=Physics&text=physics
KS4/5	S-Cool GCSE and Level Physics revision	https://www.s-cool.co.uk/
KS4/5	Khan Academy physics resources GCSE and A level	https://www.khanacademy.org/science/physics
KS4-5	Glenhoe Education- Physics resources	http://glencoe.mheducation.com/sites/0078807220/
KS4-5	Physics Zone resources, simulations and experiments	https://www.physics-zone.com/index.html
KS4-5	Physics Guides on line organised under themes	https://www.sparknotes.com/physics/

KS4/5	Nrich Mathematical questions and resources connected to Physics GCSE and A Level	https://nrich.maths.org/public/topic.php?group_id=48&code=-395
KS4/5	Isacc Physics website physics problem solving for GCSE and A Level Physics- teachers can set up accounts and group students into classes to set problems for them	https://isaacphysics.org/
KS4/5	Simulations which can be used to replace practicals	https://phet.colorado.edu/en/simulations/category/physics
KS5	Next Time- fun questions and answers in Physics designed to make you think about physical concepts	http://www.physicslab.org/Compilations/NextTime.aspx
KS3-5	Zooniverse- introduces students of all ages to astronomy	https://www.zooniverse.org/projects/zookeeper/galaxy-zoo/about/education
KS4-5	CERN- resources to support Physics/engineering and computing	https://home.cern/resources?topic=1113
KS4/5	Picture of the Day daily pictures from space with explanations – astronomy	https://apod.nasa.gov/apod/astropix.html
ALL	NASA- STEM activities for students of all ages, news, articles	https://www.nasa.gov/stem
KS4	Discover the questions that Physicists are trying to answer	https://www.thingswedontknow.com/physics/
KS5	Ask a Physicist- look at questions which have been asked before and the answers they have received and submit your own	https://www.physicscentral.com/experiment/aska-physicist/question.cfm
KS4/5	British Physics Olympiad- past papers and solutions to physics problem solving questions	https://www.bpho.org.uk/
KS5	Physics Questions set by Oxford tutors	https://sjcinspire.com/category/physics+questions/
KS5	Brilliant- develop quantitative skills in Maths, Physics and computer science thorough questions and challenges- free trial then charges may apply	https://brilliant.org/
KS5	I want to study Engineering- questions / problem solving to support university applicants	https://i-want-to-study-engineering.org/
KS3-5	Interesting resources to provide stretch and challenge involving input from a range of subjects	https://sjcinspire.com/students/year-11-inspire-programme/
KS3-4	Science museum resources- physics	https://blog.sciencemuseum.org.uk/tag/physics/page/2/

KS4/5	The New Scientist	https://institutions.newscientist.com/
KS2- KS5	Oxford Sparks Science website- podcasts/videos/teaching resources, articles, activities/competitions materials	https://www.oxfordsparks.ox.ac.uk/
KS4-5	Oxford Science blog	http://www.ox.ac.uk/news/science-blog
KS4-5	Oxford Research: Near perfect distance measurement article and video	http://www.ox.ac.uk/research/research-impact/near-perfect-distance-measurement
KS4-5	Oxford Research: Cheaper, Smaller, Super resolution - Nano imaging	http://www.ox.ac.uk/research/research-impact/cheaper-smaller-super-resolution
KS4-5	Oxford Research: To the Zooniverse and beyond- how researchers having been harnessing volunteers to support their work	http://www.ox.ac.uk/research/research-impact/zooniverse-and-beyond
KS4-5	Oxford Research: Particle Accelerator Physics for the masses	http://www.ox.ac.uk/research/research-impact/particle-accelerator-physics-masses
KS4-5	Oxford Research: A Revolution in Solar Power Technology	http://www.ox.ac.uk/research/research-impact/revolution-solar-power-technology
KS4-5	Oxford Research: How to be certain of uncertainty in climate change and weather forecasts	http://www.ox.ac.uk/research/research-impact/how-be-certain-uncertainty-climate-and-weather-forecasts
KS5	Oxford Research: How do quantum physicists affect industry? (video)	https://www.youtube.com/watch?v=0c3AwqgKwZq&feature=youtu.be
KS5	Oxford University research in Quantum Computing	https://www.research.ox.ac.uk/Area/quantum
	Radio/Podcasts/Videos/MOOCs	
ALL	Bill Nye the science guy videos	https://www.youtube.com/watch?v=nDN7M0J3HXc
	The Naked Scientist radio show, podcasts and more	https://www.thenakedscientists.com/
ALL	Physics documentaries	https://cosmolearning.org/physics/documentaries?contributor=20 https://www.bbc.co.uk/iplayer/search?q=physics

ALL	Physics documentaries playlist youtube	https://www.youtube.com/playlist?list=PLakGKrtT9UxF4geuTsN7wa_zjWEPJ81Z-
KS3	KS3 Science podcasts including some on Physics	https://scienceatschool.co.uk/tag/ks3/
KS4/5	Physics TED Talks - Short talks of less than 20 minutes on various Physics topics	https://www.ted.com/topics/physics
KS4-5	Oxford University Biology Podcasts	https://podcasts.ox.ac.uk/keywords/biology
KS4-5	Player FM Physics podcasts	https://player.fm/podcasts/Physics
K4/5	BBC4 In Our time- interview with Physicists	https://www.bbc.co.uk/programmes/b006qykl/topics/Concepts_in_physics
KS5	GCSE and A Level Physics podcasts	https://www.senecalearning.com/blog/gcse-a-level-podcasts-by-seneca/
KS4/5	GCSE and A Level Physics podcasts	https://www.listennotes.com/podcasts/revise-gcse-physics-revision-seneca-learning-0AloyjuHsGb/
KS4/5	Interesting Physics Podcasts	https://www.podbean.com/podcast-detail/vagz2-33a39/Physics-World-Stories-Podcast
KS5	Free Physics MOOCS	https://www.my-mooc.com/en/categorie/Physics
	Magazines and Journals	
KS4/5	Nature- world's leading multidisciplinary science journal	https://www.nature.com/
KS5	Nature/Physics	https://www.nature.com/nphys/
KS4-5	New Scientist	https://institutions.newscientist.com/
KS4-5	Physics Today	https://physicstoday.scitation.org/journal/pto
	Competitions	

KS4-5	The British Physics Olympiad- 10 annual Physics competitions for KS4 and KS5 students- website contains past questions and papers with answers	https://www.bpho.org.uk/
KS2-5	Greenpower Trust Science technology Maths and Engineering challenge to design, build and race an electric car for children aged 9 upwards	https://www.greenpower.co.uk/
KS2-5	Formula One in Schools- students aged 9 to 19 deploy CAD/CAM software to collaborate, design, analyse, manufacture, test, and then race miniature compressed air powered cars made from F1 model block.	https://www.f1inschools.co.uk/
KS3-5	National Science and Engineering Competitions	http://www.nsew.org.uk/science-competitions-in-the-uk.html
KS3-5	Big Bang Competitions for young scientists and engineers	https://competition.thebigbangfair.co.uk/
KS3-5	Various science competitions	https://www.see-science.co.uk/whats-on/competitions/
KS4-5	The Oxford Scientist- Schools' Writing Competition is open! It is on the theme: A scientific discovery, invention or advance that still affects the world today. For a chance to win a prize and have your piece published in <i>The Oxford Scientist</i> , send us your thoughts as a 700-word essay by Friday 1 st May. Open to all UK school students in Years 10 to 13.	http://oxsci.org/schools/ Deadline 1 st May 2020
KS5	Unsung Heroes of Science Video Making Competition. Anyone in the UK aged 16-18 can enter – we want you to make a short video celebrating a scientist who deserves wider recognition. There are no restrictions on who you can choose to celebrate – they can be alive or dead and from anywhere in the world. We want to see who inspires you in the world of science and learn more about them.	https://www.hertford.ox.ac.uk/unsungscience Deadline Friday April 24 th 2020
	Events	
KS3-5	Royal Society offers lectures/events digital collections and resources	https://royalsociety.org

Resources for Teachers

The Ogden Trust aims to promote the take up of Physics post 16 with events and programmes to enhance physics teaching	https://www.ogdentrust.com/
Clickview provides remote lessons with resources, worksheet and videos-	https://www.clickview.co.uk/blog/continuity-learning-during-absence/
Journal for teachers of Science in Europe	https://www.scienceinschool.org/content/track-inspection-how-spot-subatomic-particles
Institute of Physics- resources to support teachers	https://spark.iop.org/#qref
TES Teaching Resources for Physics - Lesson plans worksheets and activities for secondary and students	https://www.tes.com/teaching-resources
Oxford Sparks Teaching resources including Physics	https://www.oxfordsparks.ox.ac.uk/content/teaching-resources
The Royal Institution of Science resources and events	https://www.rigb.org/families/experimental/physics
<p>The British Science Association- with sections on Physics and astronomy</p> <ul style="list-style-type: none"> ▪ STEM competitions- CREST and Youth Challenge ▪ British Science week ▪ Mass participation projects and more 	https://www.britishscienceassociation.org/physics-and-astronomy-section
<p>The Association of Science Education- Resources for KS2-5 students, best practice teaching guide Outreach events, conferences</p>	<p>https://www.ase.org.uk/resources note small membership fee applies</p>