

Canadian Nuclear Society / Société Nuclaire Canadienne
Ionising Radiation Workshop
Appendix F: Recommended Links for Educators and Students

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Subject (alphabetical)	Organization	Website
Canadian Nuclear FAQ	Dr. Jeremy Whitlock	www.nuclearfaq.ca/
Canadian Nuclear Industry	Canadian Nuclear Association Teach Nuclear	www.cna.ca http://teachnuclear.ca/
Canadian Research Reactors	AECL / Canadian Nuclear Laboratories Archives CBC ZEEP Canadian Nuclear Laboratories NRU McMaster Nuclear Reactor Slowpoke University of Alberta Dalhousie University Saskatchewan Research Council	http://www.cbc.ca/archives/categories/science-technology/energy-production/ http://media.cns-snc.ca/history/ZEEP/ZEEP_AECL1970.pdf http://www.cnl.ca/en/home/facilities-and-expertise/nru/default.aspx mnr.mcmaster.ca www.ualberta.ca/~slowpoke/ http://www.dal.ca/news/2011/05/05/gone_gone_gone.html http://blog.src.sk.ca/environment/research-reactor-valuable-industry-tool/
Canadian Utility	Bruce Power	http://www.brucepower.com/
Canadian Utility	Hydro-Québec	http://www.hydroquebec.com/decommissioning-gentilly-2/
Canadian Utility	New Brunswick Power	http://nbpower.com/html/en/about/operating/nuclear.html
Canadian Utility	Ontario Power Generation	http://www.opg.com/Pages/home.aspx
CANDU Reactors	SNC Lavalin Bill Garland's Nucl. Eng. CANDU textbook	http://www.snclavalin.com/en/market-services/power/nuclear/ http://www.nuceng.ca/candu/
CNA Education	Canadian Nuclear Association	http://teachnuclear.ca/
CNS Education Page	Canadian Nuclear Society	https://www.cns-snc.ca/cns/education-communications/teachers-students/
CNSC Education Page	Canadian Nuclear Safety Commission	http://www.nuclearsafety.gc.ca/eng/educational-resources/index.cfm#
Cosmic Origins of Uranium	World Nuclear Association	http://www.world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/The-Cosmic-Origins-of-Uranium/
Cosmic Rays	Moscow Neutron Monitor NASA's Cosmicopia Caltech: R.A. Mewaldt Max Planck Inst. – Atmospheric Cherenkov Light	http://cosrays.izmiran.ru/ http://helios.gsfc.nasa.gov/cosmic.html http://www.srl.caltech.edu/personnel/dick/cos_encyc.html http://www.mpi-hd.mpg.de/hfm/CosmicRay/ChLight/Cherenkov.html
Education / Radiation	CBC Radio archives, Montreal Laboratory 1945	http://www.cbc.ca/archives/entry/canada-and-the-atom
Education / Nuclear	American Nuclear Society Teacher Resources	http://www.nuclearconnect.org/
Energy Supply	Nobody's Fuel	www.nobodysfuel.com
Flying – aircrew radiation briefing	Canadian Nuclear Society videos	https://www.youtube.com/channel/UCTDKqU_vz9icxvDqRk3DWMw/videos
Gamma Rays	NASA	https://imagine.gsfc.nasa.gov/science/toolbox/gamma_ray_astronomy_1.html

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Geiger detectors, software	Aware Electronics Corporation	www.aw-el.com/
Geiger detectors, software	Black Cat Systems (Windows® and Mac)	www.blackcatsystems.com/GM/GeigerCounters.html
Geiger tubes	LND Inc.	www.lndinc.com/
Half-life ONLINE LAB	Jefferson Laboratory equipment overview Collect the Data Calculations & Results Health Physics Soc. Long half-life estimation Standford U. News – solar flares affect decay rates? MIT Net Advance of Physics – variability of decay?	http://education.jlab.org/frost/half-life_part1.html http://education.jlab.org/frost/half-life_part2.html http://education.jlab.org/frost/half-life_part3.html http://hps.org/publicinformation/ate/g8270.html http://news.stanford.edu/news/2010/august/sun-082310.html http://web.mit.edu/redingtn/www/netadv/XperDecRat.html
Industrial Radioisotopes	World Nuclear Association	www.world-nuclear.org/info/inf56.html
Interactive Chart of the Nuclides	National Nuclear Data Centre, Brookhaven National Laboratory	www.nndc.bnl.gov/chart/
International Nuclear Industry	International Atomic Energy Agency World Nuclear Association (photos) Power Plants Around the World World Association of Nuclear Operators	www.iaea.org/ www.world-nuclear.org/ http://www.industcards.com/ppworld.htm#nuclear%20power%20plants http://www.wano.info/en-gb
On-line experiments	Tasha Richardson	http://tadric.weebly.com/
Ionising and Non-ionising Radiation	US EPA	https://www.epa.gov/radiation
Ionisation Energy	US NIST periodic table HTML table of data	http://www.nist.gov/pml/data/ion_energy.cfm https://www.nist.gov/pml/periodic-table-elements http://physics.nist.gov/cgi-bin/ASD/ie.pl?spectra=H-DS+i&units=1&at_num_out=on&el_name_out=on&shells_out=on&level_out=on&e_out=0&unc_out=on&biblio=on
Lord Ernest Rutherford Museum	Professor John Campbell (biographer) McGill University	www.rutherford.org.nz http://www.physics.mcgill.ca/museum/rutherford_museum.htm
Medical Radioisotopes	MDS Nordion World Nuclear Association World Nuclear Association -- Medicine You Tube technetium scintigraphy	www.mds.nordion.com www.world-nuclear.org/info/inf55.html http://www.world-nuclear.org/info/Non-Power-Nuclear-Applications/Radioisotopes/Radioisotopes-in-Medicine/ www.youtube.com/watch?v=Mj0HDN82Pfo

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Modern Physics for HS	Roberta Tevlin	http://roberta.tevlin.ca/
Natural Fission Reactors	American Nuclear Society	http://www.ans.org/pi/np/oklo/
Neutrinos	Laboratoire d'Annecy-le-Vieux de Physique des Particules, CEDEX France	www.lapp.in2p3.fr/neutrinos/anhistory.html
Neutrinos – SNO Lab	Queen's University	www.sno.phy.queensu.ca/
Neutron Scattering	Canadian Nuclear Laboratories Canadian Neutron Beam Centre	http://www.cnl.ca/en/home/facilities-and-expertise/cnbc.aspx
Nuclear Energy Basics	University of British Columbia Faculty of Science	http://c21.phas.ubc.ca/article/nuclear-energy-basics
Nuclear Medicine	Sylvia Fedoruk	http://media.cns-snc.ca/history/fifty_years/fedoruk.html
Nuclear Wall Chart	Lawrence Livermore Laboratories	www.llnl.gov/abc/wallchart/guide.html
Nuclides	Nucleonica	https://www.nucleonica.com/poster.aspx
NORM about	World Nuclear Association	www.world-nuclear.org/info/inf30.html
NORM Transportation	Health Canada	https://www.canada.ca/en/health-canada/services/environmental-workplace-health/reports-publications/environmental-contaminants/canadian-guidelines-management-naturally-occurring-radioactive-materials-norm-health-canada-2000.html
NORM Specialists	Tervita	http://www.tervita.com/solutions/challenge/waste-management-and-disposal/norm-management
Particle Decay	Berkley Lab The Particle Adventure	www.particleadventure.org/decay_intro.html
Particle Physics for teachers	Berkley Lab The Particle Adventure	www.particleadventure.org/edumat.html
Periodic Table	US DOE Los Alamos Nuclear Lab – interactive U. of Nottingham Periodic videos	http://periodic.lanl.gov/index.shtml http://www.periodicvideos.com/
Periodic Table – song	Tom Lehrer's Elements song animated with table Animated words	https://www.youtube.com/watch?v=AcS3NOQnsQM https://www.youtube.com/watch?v=zGM-wSKFBpo https://www.youtube.com/watch?v=bfrv8Y9746g
Physics	MinutePhysics facebook & videos	www.youtube.com/user/minutephysics
Physics Demo	Awesome cloud chamber video / Berlin	www.youtube.com/watch?v=Efgy1bV2aQo
Physics Demos	St. Mary's University including mousetrap reactor	http://demos.smu.ca/index.php/demos/modern/30-mousetrap-reactor
Physics Education Project	Contemporary Physics Education Project	www.cpepweb.org/
Physics Fact Book	Scientific Essays	http://hypertextbook.com/facts/
Physics Students	The Feynman Lectures on Physics	http://www.feynmanlectures.info/
Physical Scales	Scale of the Universe -	http://scaleofuniverse.com/

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Planck's Constant	Perimeter Institute high school experiment	http://www.perimeterinstitute.ca/outreach/teachers/class-kits/measuring-plancks-constant
Power Plants	Power Plants Around the World pictures	www.facebook.com/pages/Power-Plants-Around-the-World/105454286153478 http://www.nucleartourist.com/
Radiation & Radioactivity	Canadian Nuclear Association	https://cna.ca/wp-content/uploads/2017/01/2017-Factbook-EN-WEB-FINAL.pdf
In the classroom	Health Physics Society Science in School (European) (includes hot balloon!)	http://hps.org/ http://www.scienceinschool.org/2009/issue12/radioactivity
Consumer Products	Oak Ridge Area Universities	www.oraui.org/ptp/collection/consumer%20products/consumer.htm
Wilhelm Roentgen	Resonance Publications	www.resonancepub.com/wroentgen.htm
Radiation effects	UN – Scientific Committee Effects Atomic Radiation	www.unscear.org/unscear/en/publications.html
NORM	Idaho State University	https://sites.google.com/isu.edu/health-physics-radinf/home
Natural Reactors – Oklo	American Nuclear Society	http://www.ans.org/pi/np/oklo/
Energy to decay / random #	Fourmilab (Switzerland, not Fermilab)	www.fourmilab.ch/hotbits/how3.html
Quantum vacuum fluctuation	Absolute Astronomy	www.absoluteastronomy.com/topics/Radioactive_decay
Radioactive adventures	US National Institute of Standards	https://www.nist.gov/news-events/news/2015/06/vacuum-fluctuations-measuring-unreal http://scienceetcetera.blogspot.ca/p/radioactivity.html
Radiation Epidemiology	International Commission on Radiation Protection	www.icrp.org/
Radiation Geophysics	US Geological Survey	http://pubs.usgs.gov/of/2005/1413/maps.htm
Radioactive Substances in Compact Fluorescent Lamps	NEMA Standard LSD 15-1993 (R2001)	www.nema.org/stds/lsd15.cfm
Radiation Safety	MSU – Historical Figures in Radiation Safety	https://ehs.msu.edu/lab-clinic/rad/hist-figures/index.html
Radioactive tracers	Bizarre 1950s TV commercial on YouTube	www.youtube.com/watch?v=9Q1gksqghLU&NR=1
Radiometric Time Scale	US Geological Survey	http://pubs.usgs.gov/gip/geotime/radiometric.html
Radioisotopes – uses	Canadian Nuclear Safety Commission	https://www.cnscc-scsn.gc.ca/eng/nuclear-substances/index.cfm
	US EPA	https://www.epa.gov/radiation
Radon	Health Canada	https://www.canada.ca/en/health-canada/services/radon/testing-your-home-radon.html
Safety	Canadian Nuclear Safety Commission Nuclear Substances ... Regulations SOR /2000-207	http://cnscc-scsn.gc.ca/eng/nuclear-substances/licensing-nuclear-substances-and-radiation-devices/index.cfm

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		http://laws-lois.justice.gc.ca/eng/regulations/SOR-2000-207/index.html
Science Workbooks, lesson plans, Australian context	Australian Nuclear Science and Technology Org.	http://www.ansto.gov.au/Resources/DiscoveryCentre/EducationResources/Posters/index.htm
Shielding	Harvard	https://sciencedemonstrations.fas.harvard.edu/presentations/%CE%B1-%CE%B2-%CE%B3-penetration-and-shielding
Sources of Radioactivity	D.R. Lapp (paywall)	http://scitation.aip.org/content/aapt/journal/tpt/48/2/10.1119/1.3293653
Sticky Tape Gamma	Physics Dept., UCLA video	www.nature.com/nature/videoarchive/x-rays/
Sustainable Energy – without the hot air	David MacKay, U. of Cambridge free e-book	www.withouthotair.com/
Synchrotron (electron)	Canadian Light Source teachers workshop	www.lightsource.ca/education/
The Standard Model	Lawrence Berkeley National Laboratory	www.particleadventure.org/decay_intro.html
Uranium In drinking water Uranium and Depleted U	Cameco Corp. Educational Material Canadian Medical Association Journal World Nuclear Association	www.cameco.com/uranium_101/ www.cmaj.ca/cgi/content/full/170/6/951 http://www.world-nuclear.org/info/Nuclear-Fuel-Cycle/Uranium-Resources/Uranium-and-Depleted-Uranium/?jmid=2120&j=258864716
LIGO – neutron star collisions are source of heavy nuclides	Laser Interferometer Gravitational-Wave Observatory	https://www.ligo.caltech.edu/
US Nuclear Industry	Whatisnuclear.com	www.whatisnuclear.com/
Vaseline Glass	Oak Ridge Area Universities	http://www.orau.org/ptp/collection/consumer%20products/vaseline.htm
Web driven nuclear science	Nucleonica	www.nucleonica.net/index.aspx

Internet links are ephemeral.

When you find a dead link, please contact the CNS and we will hunt for the new address or provide a replacement.