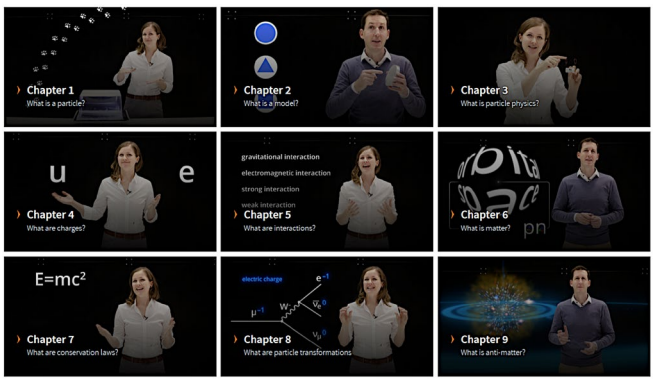
Science websearch

Jon Tarrant shares and reviews various science websites that may be of interest to *SSR* readers. If you are an enthusiastic user of online resources and would like to contribute to future *Science websearch* columns then please contact Jon at jontarrant@cantab.net

CERN Particle Physics Course

https://ppc.web.cern.ch



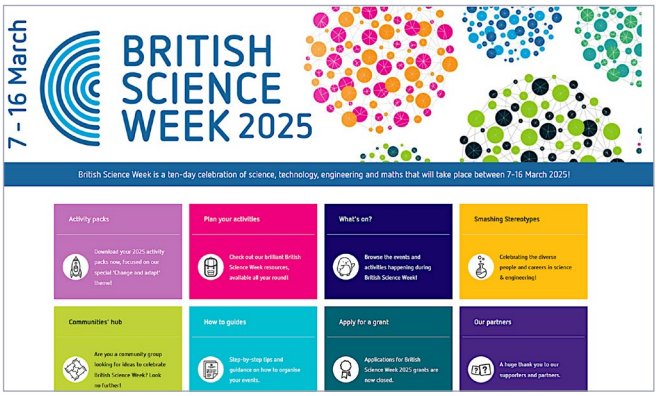
2025 has been designated the International Year of Quantum Science and Technology (IYQ) in recognition of the 100th anniversary of Werner Heisenberg's formulation of quantum mechanics. Various resources to mark this occasion are available from www.quantum.gov/workforce/iyq-2025/#RESOURCES but a particularly noteworthy contribution to the celebrations is a 16-part online course from CERN that was launched as a pilot in 2024 and is pitched specifically at high-school students. Registration is required but is completely free and comes with the kudos of being granted guest access to part of the CERN portal.

Although the course is primarily designed for self-paced individual learning, its creators (Jeff Wiener and Julia Woithe) have included a number of resources for teachers that are listed at the foot of the page. Each chapter is presented via a short video (typically 10–20 minutes) that is hosted on *YouTube* but can only be accessed via the CERN platform. After each video has been viewed, there is a short but carefully worded quiz, with a mixture of single- and multiple-response answers, which truly tests students' understanding. A retry option is provided for incorrectly answered questions, and those who complete all 16 chapters qualify for a certificate of participation.

The content is well paced and nicely explained by the two presenters, who both add their own personality to the videos. Students studying the particle aspects of current A-level physics syllabuses will find useful supporting material in this course, and even high-ability GCSE students should be able to access some of the content.

British Science Week

www.britishscienceweek.org



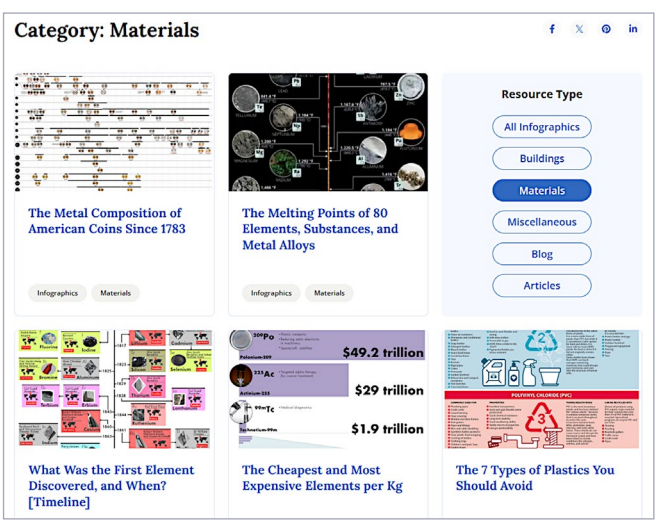
Although the scheduled dates for British Science Week 2025 may have passed by the time this issue of *SSR* is published, the resources (together with those from previous years) will remain available and are therefore worth highlighting.

The theme for this year's British Science Week is *Change and adapt*, and the downloadable resource pack for secondary students (ages 11–14) offers both classroom and outdoor activities, which range from an *Animal adaptations* card-sort to a *Footprint tunnel* construction project. For older students there is a nice *Defeat the tumour* activity and an IT-based project that uses space data to investigate droughts and floods around the globe. The pack also highlights the British Science Association's CREST Awards and its *Smashing stereotypes* campaign.

An on-demand video for key stage 3 students, entitled *From scales to tails: the evolution and adaptation of reptiles*, will be available from www.developingexperts.com/events/558 after 7 March 2025.

Alan's Factory Outlet: Materials Infographics

https://alansfactoryoutlet.com/category/infographics-metals-elements-materials



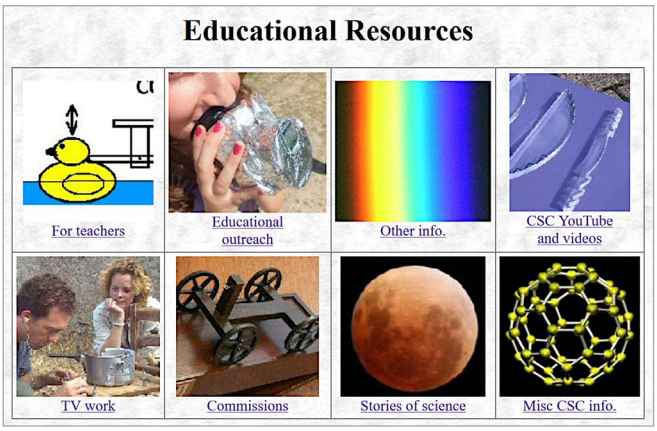
Alan's Factory Outlet is an American supplier for custom carports, garages and metal buildings, but its website is also home to an interesting collection of infographics on subjects such as the most expensive elements and constituents of common alloys.

Some of the infographics are available as PDF downloads, including a nice version of the periodic table that features the discoverer of each element. There is also a nice poster giving the uses of 38 radioactive elements, together with each one's half-life and the origin of its name.

At the time of writing, the PDF for elements' discovery dates links to a document showing the trees that give us 53 types of wood, which is interesting in its own right but not what was expected. I have let the company know and the alert has been acknowledged so everything should be correct by the time this round-up goes to press.

The Creative Science Centre

www.creative-science.org.uk



The Creative Science Centre is the brainchild of Dr Jonathan Hare, who is attached to the chemistry department at Sussex University. The website is an old-style static design, perhaps on account of being created in the 1990s, and exploring the resources can be tricky, not least because information about talks and workshops is hosted on www.zoomscience.co.uk and videos can be viewed either on the Vega Science Trust website at http://vega.org.uk/video/subseries/27 or via Jonathan Hare's *YouTube* channel at www.youtube.com/channel/UCwAIQLeXp-274212Tnfz9sg.

It is therefore best to start in the *For teachers* section and to open all links in new tabs. Several of the resources relate to carbon, particularly buckminsterfullerene and Sir Harry Kroto, but the wide range of topics extends from radio electronics and wind-power generators to the science and technology of skateboarding, mostly with hands-on projects that students can explore as practical activities.

It is worth adding that the Vega Science Trust, mentioned above, closed in 2012 but its website (http://vega.org.uk) remains online and hosts a variety of content that could be of interest to teachers and older students alike. Programmes range from flight in birds and aircraft to states of matter, and include a series of half-hour round-table discussions, under the banner *The next big thing*, addressing issues from ageing to artificial intelligence.

Energising Futures: Women Engineers

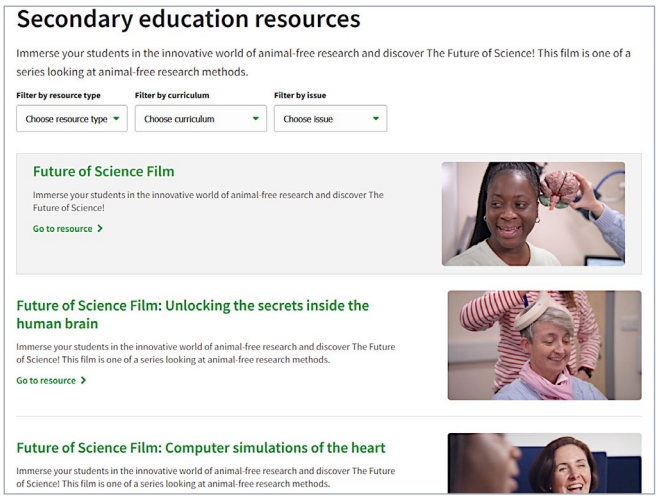
https://energisingfutures.co.uk/collections/women-and-girls-in-science

BP Educational Services (now known as Energising Futures) continues to be very active in promoting women and girls in science. Hot on the heals of its *Super scientists* series, which was highlighted in the last issue, comes a set of resources devoted to women in engineering.

As well as a downloadable, double-sided A3 poster, there is also a 15–20 minute presentation that is suggested for use in assemblies but could also be used in science lessons when discussing careers options, for example. There are some specific dates mentioned in the presentation that could provide hooks, including International Women in Engineering Day on 23 June. The final slide notes that the resources have been developed in partnership with, and are accredited by, the ASE.

Animal Aid: Future of Science

www.animalaid.org.uk/education/education-resources



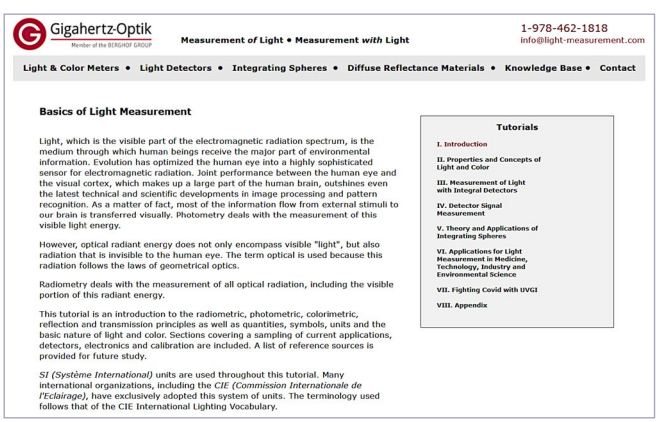
Founded in 1977 and supported by the likes of Chris Packham and Sara Pascoe, Animal Aid is a not-for-profit company that campaigns peacefully against animal abuse and promotes a cruelty-free lifestyle. As part of its work, Animal Aid has created a range of educational resources, including a series of short films covering '*the innovative and exciting field of animal-free, human-relevant medical research*'. By the organisation's own admission, some of its materials have the potential to upset people and many resources are therefore intended for use only with older students (aged 13+ years).

Accompanying lesson plans are provided for topics such as *Stem cells in medicine*, *Investigating the brain*, and *Evaluating the drug development process*. The depth of resources provided is excellent, including presentations, diagrams, cloze question sets, further reading and answer sheets. Everything is available to download for offline use. Additional resources include a factsheet on the animal welfare implications of horse racing and a vegan eat-well poster (both of which can also be ordered free-of-charge in physical form).

In view of Animal Aid's ambitions, some people may regard the materials as being too political for classroom use but (in my opinion) such concerns are unfounded; although the content is clearly promoting a particular view it does so in a very fair and balanced manner. As always, individual teachers must assess the resources before using them in their own classrooms.

Light theory and applications

https://light-measurement.com/tutorials-on-light-measurement



Gigahertz-Optik specialises in the measurement of different aspects of visible and near-visible light. As part of its website, the company offers a seven-part online tutorial tackling the electromagnetic spectrum from 100 nm to 1 mm, which extends from UV (A-C) through visible light to IR (A-C).

Although the website has a very traditional and rather corporate feel, it provides a good deal of educational information ranging from LED lighting technology to the reduction in tuberculosis infection rates due to UV treatment of room air. The content is clearly presented and there are useful diagrams. Some of the mathematics will be daunting for younger students although it should satisfy the deeper curiosity of teachers and A-level students. Fortunately, the written content can be understood without any appreciation of the integrals.

Medical and biological topics include *Phototherapy and radiation protection* (which has information about the incidence rates of malignant melanoma) and *Plant physiology* (which covers photosynthesis effects due to both visible light and UV). Navigation can be a little bit tricky in places so it is useful to know that there is a headline index in the bottom right corner of every page.

For offline use, there is an excellent downloadable version of the tutorial that is much more colourful and also benefits from a better layout than the website itself. That said, the 42-page PDF has strange page numbering, but this is only a minor issue and does not detract from its overall value.

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- Websites are checked as close to printing as possible – however website addresses do change.
- Inclusion of a website does not imply that ASE endorses the content of the site.
- Sites are suggested on the basis of 'take a look as you might find something interesting and useful' – we have not read every page nor checked every link.
- Sites that have been listed previously may be reviewed again to focus on new content that has been added.
- Some sites may involve subscriptions and/or payment for download of material. We have flagged this where appropriate.

We are always keen to learn about any websites you have found or produced that may be of interest to other *SSR* readers. Please send details to the *Science websearch* editor, Jon Tarrant, at jontarrant@cantab.net.

We would also be interested in hearing about how you have used websites that have appeared in *Science websearch* in your educational setting.