

# ASSOCIATION SUCCESS STORY



Bringing cutting edge science to the classroom

**ASSOCIATION OF THE BRITISH  
PHARMACEUTICAL INDUSTRY (ABPI)**

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## PROJECT

### Bringing cutting edge science to the classroom

How the Association of the British Pharmaceutical Industry is raising awareness of the role that pharmaceutical companies, their members, play in the discovery and development of medicines



## ORGANISATION

Association of the British Pharmaceutical Industry (ABPI)



## DATES

The website is the result of ongoing commitment over the last 15 years. The most recent update to the site went live in October 2016.



## CATEGORIES

eLearning, Website



## Members

ABPI is the trade body for innovative research-based biopharmaceutical companies, large, medium and small across the UK. We have over 150 members; full members are established research-based pharmaceutical companies, others are research or general affiliate members.



## Project team

The project to develop the website was instigated by Sarah Jones in 2001. Sarah has driven developments over the years, supported by a number of Education Officers. Amira Burshan led the most recent update to the site.



## Objectives

There are three key reasons for ABPI developing and providing long-term support for this website.

- 1 To support science teaching in schools and colleges; to make science, particularly biology, a more interesting topic
- 2 To enthuse more young people to want to study science beyond GCSE and A-level and potentially consider a career in science
- 3 Students, their teachers and parents, are or will be, future patients. We want them to understand why disease occurs, how diseases can be treated and what they can do to stay healthy. The website also provides information on how medicines are discovered and developed, including the part that pharmaceutical companies play in this process.



## Introduction

The screenshot shows the ABPI website homepage. At the top, it says 'Interactive resources for schools' with navigation links for Home, Teachers, About the ABPI, and Contact Us. There is a search bar with the text 'I'm looking for...'. Below this, there's a section for selecting an age range to seek interactive content for, with buttons for 5-7, 7-11, 11-14, 14-16, 16+, and a 'View all topics' button. A 'What's new?' section lists recent updates like 'Cell biology', 'Cell division', 'Chemistry of life', 'Evolution', 'How medicines work', and 'Pathogens and the immune system'. There are also links for 'Download library', 'Animal research', 'Genes and inheritance', 'Who is this site for?', and 'Careers website'.

Homepage

ABPI member companies discover, develop and market new medicines. Within the curriculum-focussed topics on the website, students, and their teachers are given easy to understand explanations of why disease occurs and how medicines can be used to treat common diseases.

The website provides a platform for the ABPI to raise awareness of the role that pharmaceutical companies play in the discovery and development of medicines. In doing so, it raises young people's awareness of career opportunities within the pharmaceutical industry.



## Background

Media headlines about medicines and the pharmaceutical industry are often focused on the cost of medicines and issues with the NHS not being able to afford them. These headlines influence the public perception of the pharmaceutical industry.

The challenge to create new, innovative medicines which offer life-enhancing and life-saving benefits is a big one. To develop one new medicine takes around 12 years of research and development and, for every marketed medicine that makes enough money to pay for its development, about 25,000 chemical compounds were tested. On average 25 of these will have gone into clinical trials and five received approval for marketing. Most of this research and development will have been paid for by pharmaceutical companies. But recouping the high cost of all this research and development means that when new medicines reach the market, the NHS can't afford to pay for them - and the public perceives the industry to be holding back scientific progress for the pursuit of profit.

One of the ways to build trust across all of these issues is for industry to increase our engagement and visibility to all audiences - whether that's the NHS, politicians, the media, and the general public. Our schools website targets one segment of the general public - young people and educators - through delivering practical knowledge, inspiration and ideas about all aspects of science and pharmaceuticals. Fundamentally shifting or changing our reputation with this audience is not a quick exercise, but an investment in the long-term to embed positive thinking about the industry before negative perceptions or connotations have the chance to set in.

The UK science base is also important to the pharmaceutical industry sector. Scientists employed by UK pharmaceutical companies have provided the inspiring ideas and practical solutions which have created many new medicines. The industry needs to employ highly qualified scientists to bring more new medicines to patients. By encouraging young people

to study science at school they could become the scientists the pharmaceutical industry will employ in years to come, or they may work as doctors, nurses, or researchers in universities who could also contribute to ensuring the UK continues to play a big part in creating the medicines of the future.

## Activities

The resources have been developed by teachers and educators, so the focus is always to provide teachers and students with something they need and can use. From the early years' content, with its simple games and illustrated stories, to the exciting 16+ resources supporting the new A levels, almost everything on the site has a direct relevance to the UK school curriculum and/or the exam specifications students have to get to grips with. Also, because they are not aimed at specific exam specifications – although they aim to cover all of them, they offer students breadth and depth beyond the confines of a particular course.

The website was first created nearly 15 years ago to feature interactive web-based materials developed for the ABPI, but hosted elsewhere. It has gone through several iterations, the latest version, which is optimised for use on tablets as well as laptop and desktop computers, went live in October 2016.

The screenshot shows the ABPI website interface. At the top, there's a navigation bar with 'abpi' logo and 'Interactive resources for schools'. Below it are filters for age ranges (5-7, 7-11, 11-14, 14-16, 16+) and a search bar. The main content area is titled 'Hormones and their effects' and features a '14-16 Biology' section. It includes a 'What are hormones?' section with text and a diagram, and a 'What do hormones do?' section with text and a diagram. A sidebar menu lists various topics like 'Balanced diet', 'Body builder', 'Breastfeeding and asthma', etc.

### Interactive lesson about hormones and their effects

The site has developed through sustained effort over a number of years and relatively low level funding. This approach has created a cohort of teachers who know and trust our materials, and who value them highly. Experienced teachers are involved in the development of new materials and in the regular review and amendment of existing topics.

As the UK curriculum changes, so does the content of the site. In the last two years topics have been reviewed and revised to fit the new science GCSEs and new materials have been created to support new Biology A-levels. The site now features 46 topics all of which feature clear diagrams and animations to help students understand what they are studying. Often, a difficult concept becomes clear when you see things moving and working.

Science issues, from antibiotic resistance to genetic modification, cloning and animal research are also covered. When tackling these types of issues with students, teachers find it very useful to have these types of materials to use as a starting point for debates, discussions, poster development and other group work.

## What is special about the site?

- 1 Firstly, it is free to use with no password required. This means that teachers can use it in school, but also set tasks for students to do as homework, using the site
- 2 Teachers have been involved in the development, so the topics are ones they find useful, and the materials are appropriate for integrating into their teaching
- 3 The topics are 'stand-alone' with enough background information to enable a student who has missed a lesson, or who wants to explore a topic in more depth, to use it for self-study
- 4 Animations can be used 'full screen size' – so with a projector or an interactive whiteboard, the teacher can use the animation to explain a biological process to the whole class. Also, the animations are often presented in sections so a teacher in a classroom can give more explanation of what has taken place, before moving on to the next part of the process
- 5 Teachers can download diagrams, animations and other materials from the site to use in their lesson planning and teaching
- 6 The site features no adverts
- 7 Because it is not created to fit one curriculum, it can be and is used across the world. By teachers, students, and other interested individuals.

The screenshot shows the ABPI website interface with a 'List of topics' section. It features a navigation bar with age ranges (5-7, 7-11, 11-14, 14-16, 16+) and a search bar. The main content area is titled 'Choose a topic...' and lists various topics like 'Animal habitats', 'Animals including humans', 'Balanced diet', 'Beating bacteria', 'Biotechnology', 'Body builder', 'Breastfeeding and asthma', 'Cell biology', 'Cell division', 'Chemistry of life', 'Cloning', 'Diabetes', 'Diabetes 16+', 'Diet and digestion', 'Energy challenge', 'Enzymes 16+', 'Enzymes and their uses', 'Genes and inheritance', 'Genetic engineering', 'Heat and circulation', and 'Homeostasis - blood sugar and temperature'. Each topic has a filter icon and a 'View all topics' button.

### List of topics

## Partners

Since 2007 ABPI has partnered with a web design company, Enigma Interactive to develop and host the website. Content is created by teachers and other education experts who understand what teachers need in the classroom, and what will help students learn. Easy to follow diagrams and animations are then created and integrated into the text on the site.

## Challenges

What influences a young person to choose to study science? Most often it is their teacher, and we believe that anything that helps teachers produce engaging lessons will also influence the student in making their subject choices.



But because we can't easily measure the impact the website has had, it has, at times, been hard to persuade the ABPI to continue to fund developments for the site. However these have been overcome when budget was very limited through employing students to create many of the diagrams and animations and taking on students during the summer to research and update topics.

## Success Factors

ABPI promotes the website to teachers through direct contact with them and through other organisations including the Association for Science Education (ASE)'s 'Schoolscience' website, the Royal Society of Chemistry's 'Learn chemistry' site, the National STEM Resource Library and the TES and the Guardian teaching resources. A wide variety of other sites also feature links to our materials. But many teachers find it through a search engine or by recommendations from their colleagues. We have created promotional cards for the new website which will be given to science teachers and trainee science teachers at the ASE

conferences, or via initial teacher training institutions and the network of Science Learning Centres.

The site is also be used by pharmaceutical company employees who go into schools and colleges as STEM Ambassadors to support science teaching and provide career information. The topics on the site help the industry scientist to aim their presentation and discussion at the right level for students and provides content that they can use. There are currently over 850 ambassadors who work for ABPI member companies.

The high number of visitors to the site raises awareness of the ABPI and of the work of the pharmaceutical industry. The reputation of the pharmaceutical industry is enhanced through the quality of the material presented.

One measure of success of the site is its global impact. The greatest use of the website is in the UK and USA, with high numbers also accessing it from Australia, India and Canada- it is a global site for a global industry.

You are here: [Home](#) / [Download Library](#)

### Download library

ABPI own and is licensed to deal with the copyright on these resources. On accepting our terms and conditions School Teachers, Lecturers and Students are licensed and may use these resources for non-commercial educational purposes only in the original form they are downloaded in (i.e. not changed in any way). No other use of these resources is permitted. Please read our [Terms and Conditions](#) before using the Download Library.

I have read and accepted the Terms and Conditions and would now like to search the Download Library.

Age range:  Subject:  Topic:

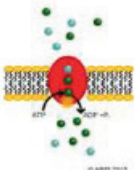
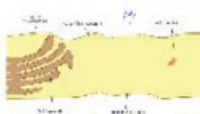

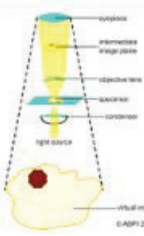
Resource Type:  Keyword(s):

### Search results

50 items found that match your criteria.

To download an item and save it to your hard drive, right click the item and, depending on your browser, select "Save link as..." or "Save target as...". Please note that this facility is not available on touch screen devices.

1 2 3 >>

<p>active transport</p>  <p>Resource type: Diagram</p>	<p>Active transport, cotransport, endocytosis and exocytosis</p>  <p>Resource type: Interactive Animations HTML5</p>
<p>Active transport, cotransport, endocytosis and exocytosis</p>  <p>Resource type: Interactive Animations Flash</p>	<p>Basic principles of a light microscope</p>  <p>Resource type: Diagram</p>

Library of downloadable resources

## Results

The number of visitors, sessions and page views has increased year on year since 2007 (the earliest year for which comparable statistics are available). Targets for growth in visitor numbers have regularly been exceeded with annual increases of up to 60%. Numbers grew in 2015 by 50% on top of 47% growth in 2014 (data from Google analytics).

The number of users in 2015 was 1,726, 008. The user numbers per month vary with school term dates. The highest numbers are in the Spring and Autumn terms; 213,345 for the month of November 2015.

Each topic on the website is delivered across several pages. In 2015 there were over three million unique page views; the most visited page had over 155,000 unique page views. Teachers and students find the site mainly through web browsers, with Google the most common source.

The feedback we value most highly is that from science teachers. They are regularly 'wowed' when we demonstrate the site to them, and they can't believe that such high quality materials are available for free.

Teachers like the site for a number of reasons. The fact that animations and diagrams can be downloaded for use in their teaching is highly valued. They also like the fact that topics stand alone and can be used by students for research independent study, and they like the extension material provided beyond the compulsory curriculum, that interested students can explore.

Students like the site as it makes their revision of topics more interesting and they especially like the animations which help them understand the science they have to study.

A 2012 survey of teachers found that nearly 80% of them visit the site regularly or plan to do so now that they have discovered it.

## What we would do differently


Overall, I would say nothing! Many projects have a lot of money spent on them, are launched with a bang, and then are not maintained. Within a few years the website is shut down, or the publication is not revised and reprinted, and materials go out of date. We have taken a very different approach, and in doing so have built up an excellent reputation within the science education community and have helped thousands of teachers create engaging science lessons.

## Conclusion

The pharmaceutical industry is seen by some to be focussed on profit as much as it is on creating new medicines. When pharmaceutical companies provide medicines for free in response to a disaster, or to treat a disease which devastates the local community, some commentators will see it as a way of promoting the company and its products.

But a trade association is free of these connotations, so the ABPI is well placed to provide support for science that teachers, and their students, require without any perceived commercial links. Through long term, low budget, support for the website [www.abpischools.org.uk](http://www.abpischools.org.uk) we have created a platform to provide high quality, web-based materials which are used by teachers because they cover the topics which are on the curriculum, but which also show how the science is relevant to 'real life'.

## Feedback

- » 'Kids love the cartoon animations of solids, liquids, dissolving etc. I will be using it this term!' (a teacher, via TES connect)
- » 'Excellent website. I am a tutor and this site makes teaching certain parts of science easier. (a tutor)
- » 'An excellent resource on blood sugar levels and genetic engineered insulin production. It was exactly what I'd been looking for.' (a teacher)
- » 'One of the best, if not the best, websites I have seen for a long time' (a teacher)
- » 'The Human Genome Project resource contains a great animation about the process of DNA sequencing'. (a teacher)
- » 'Overall the site was fantastic, really easy to use, and answered all my questions!' (a student age 16)
- » 'As an example of what sustained support by industry can offer teachers and students at every level in any school - providing enhanced learning opportunities for all students- I think this resource is hard to beat!' (Ann Fullick MA (Cantab) CBiol FRBS, an education consultant and science writer) 

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