

Re : Turned off science

Source: <http://sci.tech-archive.net/Archive/sci.math/2005-06/msg02999.html>

- *From:* Jean-Claude Arbaut <jean-claude.arbaut@xxxxxxxxxxxx>
 - *Date:* Sat, 18 Jun 2005 01:15:34 +0200
-

Seeing that 150 years after Darwin !!! Stunning !

Le 18/06/2005 00:03, dans
fNHse.5969\$NX4.1823@xx, « SKS »
<info2knospam@xxxxxxxx> a écrit :

- > With reference to Jai's earlier post, here are a few more on that issue, or
- > nearabouts:
- >
- > 1. Turned off science
- > <http://www.msnbc.msn.com/id/8074471/>
- >
- > 2. Only dead scientists are known to teens
- > <http://education.guardian.co.uk/print/0,3858,5217856-110908,00.html>
- >
- > 3. Science dull and hard, pupils say
- > <http://news.bbc.co.uk/1/hi/education/4100936.stm>
- >
- > 4. Education: Science – in safe hands?
- > <http://www.timesonline.co.uk/article/0,,2092-1602397,00.html>
- >
- > 5. Young people are often turned off science
- > <http://www.earthwatch.org/australia/EWSchool/General.htm>
- >
- > 6. No antidote to science phobia
- > <http://www.rednova.com/modules/news/tools.php?tool=print&id=13723>
- >
- >
- > Respective Texts below:
- >
- > 1. Turned off science
- >
- > By Sandra Lilley
- > News planning editor
- > NBC News
- > Updated: 3:35 p.m. ET June 3, 2005
- >

Re : Turned off science

- > Sandra Lilley
- > News planning editor
- >
- > The battle over teaching evolution is raging in communities across the
- > country, but the headlines rarely focus on the "quiet" impact of this
- > controversy.
- >
- > Science is becoming a political "hot potato" for some students –
- > transforming what should be a dynamic, fascinating topic into a total
- > turn-off. And some students are choosing silence over losing a prom date.
- >
- > "Children are very much worried about their place in the world. Some
- > students only ask me about evolution privately, after class," said Wes
- > McCoy, PhD, who teaches Genetics, Biology and Astronomy at North Cobb High
- > School in Kennesaw, Ga.
- >
- > McCoy, who has won the Georgia "Outstanding Biology Teacher" award, is
- > active in his Presbyterian church and also serves on the National Executive
- > Board of the Presbyterian Association on Science, Technology and the
- > Christian faith, is saddened by what he has seen in his classroom.
- >
- > "Students face consequences if they choose to accept evolution in a
- > family or a church or a community that patently rejects evolution ... It
- > might affect whether you get a date to the prom, or whether you get that
- > summer job or not," McCoy said. "You may even anger close family members.
- > Conversations about evolution can make family reunions very tense."
- >
- > And at a time when the National Science Foundation projects that the
- > number of scientists and engineers reaching retirement age is expected to
- > triple in the next 10 years, McCoy and others argue that the "evolution
- > wars" are taking time away from their life's work – making these children
- > excited and prepared – to become the next Jonas Salk or Bill Gates.
- >
- > Science politicized
- > The town of Kennesaw, where McCoy teaches, is part of Cobb County,
- > Ga. It was in Cobb County that a U.S. district judge recently ruled against
- > the "evolution is just a theory" disclaimer sticker, which had been placed
- > on science textbooks by the local school board.
- >
- > So is this a "victory" for the educators, who argued against the
- > stickers in federal court?
- >
- > "The decision to place stickers on the books already reflects an
- > unfortunate politicization of science," said Brown University professor
- > Kenneth Miller, the co-author of "Biology," the textbook that had the
- > stickers removed.
- >
- > "Clearly the right thing to do was to remove those stickers and treat
- > evolution as any other subject. But in a sense it has already done damage to
- > science teaching by implying that evolution is especially weak and
- > especially shaky, when in reality it is neither," Miller said.

Re : Turned off science

Re : Turned off science

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- > Clare McKinney teaches biology and zoology at Jefferson High School in
- > Lafayette, Indiana. She is also a Christian who has been on national news
- > defending the teaching of evolution in the classroom.
- >
- > McKinney explained why the debate over evolution versus creationism is
- > appealing – and important – to children in her classes.
- >
- > "For kids this age, fairness is a real issue. Many children, who are
- > not even familiar with the sound evidence surrounding evolution, signed
- > petitions to 'include' intelligent design because it seemed 'fair,'" said
- > McKinney. That said, she also understands the pressure these children feel
- > to "reconcile" their beliefs with science – she went through it herself.
- >
- > According to McKinney, interested students have waited until they are
- > outside the classroom to discuss what they perceive as "conflicting" views.
- > "I have flat out told students that the more I know about science, the more
- > glorious God seems," said McKinney.
- >
- > She stresses in her classroom that "science is not out to prove the
- > presence or absence of God – whatever you believe, it's OK," adding, "You
- > can almost see the anxiety level diminish when I say that."
- >
- > A unified theory
- > But what concerns educators like Miller is whether this politicization
- > of basic science dissuades children from going into the field.
- >
- > Miller, an enthusiastic Catholic who wrote the book "Finding Darwin's
- > God: A Scientist's Search for Common Ground between God and Evolution,"
- > finds this troubling.
- >
- > "Science is the one thing that is universal across cultures and yet
- > [after the evolution debates] some children in this country are seeing
- > science as a potential minefield," explained Miller.
- >
- > "We are at a disadvantage if we don't teach kids evolution, because
- > it's
- > the one unified theory that can explain everything from antibiotic
- > resistance to pesticide resistance over time," Miller said. "If a child
- > becomes a pharmacist and someone develops a resistance to a drug, that is
- > evolution. We have to be able to teach it well."
- >
- > © 2005 MSNBC Interactive
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- >
- > 2. Only dead scientists are known to teens
- >
- > Rebecca Smithers, education editor
- > Friday June 17, 2005
- >

Re : Turned off science

- > Guardian
- >
- > Teenagers are so out of touch with modern science that they cannot name a
- > single living scientist, a survey reveals today.
- >
- > Environmentalist and broadcaster David Bellamy was the closest that two out
- > of almost 1,000 respondents got. Others cited Madonna, Chemical Ali,
- > Leonardo da Vinci and Christopher Columbus. Some students even plumped for
- > their science teachers.
- >
- > Students, aged 13–16, were asked to name a famous scientist in an online
- > survey carried out by exam board OCR. Isaac Newton (39%) and Albert Einstein
- > (29%) topped the list, which included Marie Curie, Charles Darwin and
- > Alexander Fleming; but the students were stumped when it came to naming
- > living scientists.
- >
- > The findings also reveal that although eight out of 10 students (79%) said
- > scientists were clever, just 7% said they were "cool or fun". Over half
- > (51%) said they thought science lessons were boring, confusing or
- > difficult – feelings that intensified as students progressed through
- > secondary school in years 9, 10 and 11.
- >
- > Students also resented the fact that science is compulsory, with many
- > wishing to drop it at GCSE. If given the choice, 45% of students would take
- > biology GCSE, 32% chemistry, 29% physics, 19% combined science and 16% would
- > opt out altogether. Clara Kenyon, OCR's director of general assessment,
- > said: "The results go to show the growing apathy in today's students about
- > science ... It is startling that no students named those responsible for
- > recent scientific advances, for example, Ian Wilmut, who cloned Dolly the
- > sheep, or Professor Colin Pillinger, who headed the Beagle 2 space probe to
- > Mars project.
- >
- > "If we can't enthuse and inspire young people about the subject while they
- > are at school, then who will carry on [Britain's] great tradition of
- > scientific discovery?
- >
- > "Universities are reporting falling numbers of science students and there is
- > a widely reported shortage of science teachers and lab technicians."
- >
- > OCR is offering GCSEs from September designed to help students understand
- > science by touching on everyday subjects such as mobile phone technology and
- > cloning.
- >
- > Ms Kenyon said she was encouraged "that unprompted, over one-third (39%) of
- > students stated the best thing about studying science was taking part in
- > practical experiments, with 24% telling us the best aspect of science for
- > them was gaining knowledge.
- >
- > "Students may not see science as interesting, but they appreciate that it
- > will be relevant to their future."
- >

Re : Turned off science

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> 3. Science dull and hard, pupils say

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> Last Updated: Thursday, 16 June, 2005, 23:37 GMT 00:37 UK

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> Science dull and hard, pupils say

>

> Scientists were seen by most pupils as clever

>

> Some 51% of teenagers think science lessons are boring, confusing or
> difficult, a survey suggests.

>

> Figures from the OCR exam board, which interviewed 950 children aged
> 13 to 16 in England, showed 7% thought people working in the area were
> "cool".

>

> The number of pupils choosing to study physics and chemistry at school
> and university level is falling.

>

> According to the survey, some children thought singer Madonna and
> explorer Christopher Columbus were scientists.

>

> Giving up

>

> When asked to name a famous scientist, 39% suggested Isaac Newton and
> 29% Albert Einstein.

>

> Also on the list were Marie Curie, Charles Darwin and Alexander
> Fleming.

>

> The survey reveals that 79% of pupils associated scientists with being
> clever.

>

> The children were asked if they would study science subjects if they
> were not compulsory.

>

> Some 45% said they would take biology, 32% chemistry, 29% physics and
> 19% combined science.

>

> But 16% would not choose any of them.

>

> Clara Kenyon, director of general assessment at OCR, said: "The
> results go to show the growing apathy in today's students about science and
> their ignorance of modern day achievements.

>

> "It is startling that no students named those responsible for recent
> scientific advances, for example, Ian Wilmut who cloned Dolly the sheep or
> Professor Colin Pillinger who headed the Beagle 2 space probe to Mars

Re : Turned off science

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- > project."
- >
- > OCR is launching a different type of science GCSE from next year,
- > which it says will encourage more involvement with modern topics such as
- > cloning or mobile phone technology.
- >
- > -----
- > Comments by readers:
- >
- > Is it fair for pupils to say school science is boring, confusing or
- > difficult? What can be done to make lessons more interesting for pupils?
- > Send us you comments using the form below.
- >
- > Science IS easy. The problem is pupils are not arriving with the
- > appropriate skills (eg. decent level of maths [particularly mental
- > arithmetic and equation skills] and logical analysis skills) and the subject
- > is dull and watered down with lots of irrelevant side issues (nothing to get
- > them excited to want to learn WHY something works). To be a scientist you
- > have to be able to comprehend and want to comprehend.
- > David, UK
- >
- > Science in schools is now boring because the kids are no longer
- > allowed to do or see anything interesting. The health and safety brigade
- > have stopped every interesting experiment or demonstration being carried out
- > and the kids have to learn everything from a book. Plus as Philip Copeland
- > points out you can earn more on the checkout in Tesco than you can working
- > in a lab. Plus in Tesco you don't spend your life working on short term
- > contracts.
- > Paul, Scotland
- >
- > To echo many of the comments, a pay commensurate with the time and
- > effort put in to become an experienced scientist would make science a lot
- > more interesting, at least to researchers like me.
- > Bernard, Parma, Italy
- >
- > Why bother to study difficult science subjects such as chemistry,
- > physics etc in order to become a scientist when you can study easier
- > business/management degrees and become a scientist's boss on a much higher
- > wage?
- > Disgruntled Scientist, Herts, England
- >
- > Are the happiest societies in the world the ones that are most
- > scientifically advanced? I doubt it... The things that bring joy to me
- > personally are the subtleties of a great novel, the intricacies of a
- > masterful musical composition, or the imagination behind an inspired work of
- > art. It's appreciation of these things that I would rather see focused on in
- > our schools – I applaud the 16% of our kids that would choose not to do any
- > science!
- > Stevan Anastasoff, Birmingham, UK
- >
- > Why suddenly everything has to be fun? Kids are superficial and often

Re : Turned off science

Re : Turned off science

- > can't recognise what's really good to know until they're, most of the time,
- > too old to learn that again. I wish my parents insisted more on me learning
- > some things when I was a kid. Sometimes kids first have to learn something,
- > later they'll learn to love it. Of course, without good teachers who also
- > love and understand what they teach this can't be done.
- > Igor, Dublin, Ireland
- >
- > I feel one problem is the inability of some science teachers to
- > properly communicate what they are teaching since they don't understand it
- > properly themselves. Biologists are often made to teach physics and science
- > GCSE teachers have often only studied up to A-level standards, for instance.
- > If you don't understand something fully yourself then how can you expect to
- > teach and inspire children about it?
- > Paul, Edinburgh, UK
- >
- > Science is not difficult or boring. The curriculum and way it is
- > taught is bad. My son was recently 'taught' about the internal combustion
- > engine using nothing more than a blackboard – not a model, not an engine,
- > not anything useful in sight. He has also just been taught about CFC's and
- > global warming!
- > Dave, England
- >
- > I gave maths and physics coaching (in Australia) to final year school
- > students for 5 years, while I was studying engineering. After I'd finished
- > that job, I asked my boss what the students at the coaching college went on
- > to study later at University. He told me that 95% of the (scores of)
- > students that I had taught went on to study either medicine or law and that
- > they only studied maths/science at school because it was easy to rote-learn
- > and get high marks. This was in the 1980s. This situation isn't likely to
- > change while the brightest students avoid becoming school teachers (for
- > obvious reasons).
- > Graham Pulford, Farnborough, UK
- >
- > The curriculum needs to be modernised to include things that are
- > of relevance for the younger generation
- >
- > Jamie Muirhead, Poole, UK
- > I sat my GCSEs last year and the sciences were always the most mind
- > numbing. The science lessons themselves were generally uninspired and, as
- > far as I was concerned, wholly irrelevant to anything that would occur in
- > 'real life'. I think that the curriculum needs to be modernised to include
- > things that are of relevance for the younger generation, otherwise the
- > popularity of the sciences will continue to dwindle.
- > Jamie Muirhead, Poole, UK
- >
- > Surely this is what the top-up fees are made for? Simply reduce the
- > fees for these courses and more people will take them.
- > Huw Pendry, Bridgend, Wales
- >
- > Science is fab. I am in my 30s and am about to complete an A level in
- > Human Biology and have really enjoyed it. I wish I had paid more attention

Re : Turned off science

Re : Turned off science

- > to science at school. I am actively encouraging my children through my
- > current studies to be interested and active in science and to question why
- > things are the way they are.
- > Claire Littlejohns, Torquay, Devon
- >
- > Be glad – in Spain the equivalent of A level students apparently do
- > not do practical experiments for health and safety reasons. A Spanish
- > student at my son's school in Surrey revelled in the quality and content of
- > the science teaching here. Be wary the same approach does not come from
- > Europe.
- > Caz, Ewell, Surrey
- >
- > I'm doing my GCSEs now, and I can tell you that the students know the
- > names of Darwin, Curie and Einstein because they're all in the syllabus, and
- > the other people (the Beagle man and Mr Dolly the sheep) are not. I read the
- > papers and interne articles, and they aren't mentioned there either. If they
- > receive such a lack of media attention AND are not taught in schools then
- > how are we expected to know them? On a related (but different) point, The
- > Biology exam this year had nothing to do with human biology whatsoever. The
- > kidney, the heart, the respiratory system are all in the syllabus and we
- > spent a long time learning about them, but nothing has come up. To Sharon
- > Kinge and James – I'm doing the Separate Science exams. It means that you
- > have to take an extra, harder exam in each of the three subjects, but you
- > get an extra GCSE and your Physics results do not affect your Biology
- > results etc.
- > Andrew Lewis, Canterbury
- >
- > I graduated from Sussex Uni in the early '90s having studied Physics –
- > Ok – it didn't seem well respected at the time, but now I can fool anybody
- > and hence earn lots of money doing close to nothing! – Kids! –Stick with the
- > hard subjects now and reap the rewards later!
- > Matt, Rushden
- >
- > Part of the problem is that doing difficult intellectual things is no
- > longer considered attractive by young people. Attractive role model
- > characteristics include things like being famous, being rich, showing off
- > that you are rich, and being popular. All pretty vacuous traits. We need to
- > try to change attitudes towards the rewards of undertaking difficult
- > personal endeavours, that will not bring 'bling' or fame. Parents – limiting
- > telly watching time to 1 or 2 hours per day would assist greatly in this ...
- > BS McIntosh, Milton Keynes, UK
- >
- > Who says science/engineering is boring – try law!
- > Ken Poole, Buckingham, UK
- >
- > When in the late 70s I studied biology and Chemistry to O level, as I
- > was hopeless at mathematics, due to poor teaching, and hence missed physics
- > for the same reason, I gained A and B grades, however later went to
- > university to study law. How boring that was, totally unlike the way lawyers
- > lives are portrayed in the media. Since graduating I have worked exclusively
- > in engineering, on programmes such as military Radar/Arianne rocket/MRI body

Re : Turned off science

- > scanners – I am constantly learning – Who says science/engineering is
- > boring – try law!
- > Ken Poole, Buckingham, UK
- >
- > I have 3 science A levels, and a 1st class honours degree in
- > engineering from a good university. So, what field do I work in? I work at
- > the interface between business and technology rather than in a hard core
- > technological discipline itself, since this enables me to provide a good
- > standard of living for my family. Many of my colleagues took less
- > educationally demanding routes to get to similar positions. I do not regret
- > the difficult path I took to get here, and am proud of my scientific
- > training and thought patterns, but I can see there were far easier routes.
- > We will not see significant numbers of young people entering scientific
- > careers, or staying in them in my case, until the rewards are there – it's
- > that simple. This will have serious consequences for the competitive
- > position of UK PLC.
- > Alex, Swansea, UK
- >
- > I'm a scientist working in medical research and agree with Philip
- > Copeland's comments – I assume he's a scientist! There are several points I
- > would like to make: firstly, these findings are not surprising – my memory
- > of school science (even up to A-level) is that it was poorly taught and I
- > suspect many of my teachers did not understand what they were teaching. In
- > addition, much of it was boring, irrelevant and outdated, for example, how
- > does endless drawing of specimens help if you are going to be a career
- > scientist? Secondly, science is hard – there is no way around that, but I am
- > sure course syllabuses could be made exciting and more relevant. Thirdly,
- > careers in science pay extremely poorly – we earn less than nurses, teachers
- > and police officers and have no job stability – we work on 2 year contracts
- > with no certainty of a position continuing beyond the end of the contract,
- > so there is no incentive to chose science because there is little point
- > continuing it if you're not going to do it as a career.
- > Lisa Clayton, Cardiff, Wales
- >
- > I'm a mechanical engineering student, and regularly visit elementary
- > classrooms to teach kids about engineering. They enjoy it so much more if
- > they can build something, and then we explain why their ideas worked in
- > simple terms. The difficulty with science is that sometimes teachers will
- > only teach facts, which students memorize and that is all they know about
- > science. It was the hands on learning in my schooling that engaged and
- > continues to engage my interest, and I think it really gives students a
- > personal interest in science, rather than a personal interest in what grade
- > they will receive.
- > Katie, Indiana, USA
- >
- > One good reason for students not being inclined to study science is
- > the poor salaries paid to scientists, especially at the start of their
- > career. Scientists are supposedly "professionals" yet are often paid the
- > same as a semi skilled worker. It is notable that the same employers who
- > bemoan the lack of Science Graduates etc coming into the workplace also
- > expect to pay these people low wages.

Re : Turned off science

Re : Turned off science

- > Gary Huckins, Guisborough Cleveland
- >
- > School teachers, especially in state schools, seem to have lost
- > any passion for the subject
- > Tim, Bristol
- >
- > Well GCSE science is pretty boring when it comes down to it. School
- > teachers, especially in state schools, seem to have lost any passion for the
- > subject, caring only for the grade results. When I did GCSE sciences my
- > biology teacher was the only one that really seemed to enjoy the subject. He
- > would go way off syllabus to explain his favourite bits, tell us funny
- > stories from the medical journals and give weird little facts.
- > Tim, Bristol
- >
- > Let's get real here. Conventional GCSE and A level courses in physics
- > and chemistry are, for the most part, boring. I say this as a medical
- > graduate with 3 science A levels. I have watched my two sons trying to get
- > to grips with these subjects at school – they just cannot see the practical
- > relevance of most of the topics. I must admit that I can empathise with
- > this; it's difficult at the age of 15 seeing the relevance of forces,
- > moments and work – to take one example. The courses need to be more
- > practically-based, ie applied and delivered by teachers who can inspire. I
- > must admit, having seen the syllabus for all 10 of my son's GCSE courses,
- > subjects like business studies and economics look much more interesting than
- > the science courses. It makes me wish I had done those instead!
- > Dr Liz Saunders, Worthing
- >
- > I'm currently reading a Physics PhD and am also working in a local
- > high school to try to interest kids in science. I've found that there are
- > few relevant, hands on experiments. We're currently running a science club
- > and a science fair and shockingly enough they love trying to blow the school
- > up or testing products to destruction! New health and safety regulations
- > have taken a lot of fun experiments out of the curriculum and yet there's
- > two whole generations above me that survived them! Science requires a lot of
- > effort (1% inspiration and 99% perspiration) and too many children don't
- > want to put any effort in at all (not just in their science lessons).
- >
- > The other thing the scheme is to trying to change is the social
- > stereotypes. We need chemists and biologists in flashy cars and physicists
- > to wear less black. There are few scientists in the public view. If you look
- > hard enough you can find the odd science program tucked away on BBC2 but
- > once upon a time Tomorrow's World was on: the technologies may not have
- > always worked but it showed how science was developing and explained it.
- > Personally, I think we need a film to do for science what Indiana Jones did
- > for archaeology (Dr Christmas Jones in Bond 19 was a step in the right
- > direction but even though I'm not a "typical" physicist I draw the line at
- > hot-pants).
- > Helen, Durham, UK
- >
- > Could it be that the problem lies with the fact that in primary
- > schools science is taught for only one and a quarter hours and that most

Re : Turned off science

Re : Turned off science

- > primary schools do not have any teachers with science degrees. To help plug
- > this gap we launched Mad Science for primary schools in September 2004 and
- > bring the type of equipment and programming that the state sector primary
- > schools simply do not have access to. More than five thousand children have
- > now enjoyed our lessons and the typical reaction is that they used to think
- > science was boring and now realise it is cool. We intend to launch key stage
- > three programmes in 2006 to keep the motivation through secondary schools.
- > Alan Sheridan, London, England
- >
- > The sandals and socks are optional
- > Mark, Cambridge, UK
- >
- > Yes, science is difficult. It's also beautiful and rewarding. If the
- > pupils voicing these gripes were to follow through my chosen subject
- > (theoretical physics) then they will discover mind blowing concepts greater
- > than any dubious chemical they may consume. The sandals and socks are
- > optional.
- > Mark, Cambridge, UK
- >
- > Science is not the same as science teaching; the difficulty is how
- > teachers in the UK are selected, trained and promoted. Teaching is about
- > communicating and scientists don't often do that well, it's almost
- > contradictory. The solution? Train excellent communicators to teach science
- > and maths – ie the ability to teach should come first, not the ability to
- > understand science. But that won't happen in this country because teaching
- > has been de-professionalised and continues to be badly rewarded,
- > Anders Stark, Cardiff UK
- >
- > I did not take any science subjects to GCE 'O' level and now regret it
- > as I have found in later life an active interest in science. I am glad that
- > my daughter enjoys science at school and college. She is now hoping to do a
- > genetics degree plus a foreign language. I hope that this will lead to a
- > rewarding career for her as she deserves this for all her effort
- > Roger Simpson, Stockport UK
- >
- > I have just completed A levels in Chemistry, Biology and Geography all
- > three considered sciences. I love science. Unfortunately I feel I am unable
- > to pursue a career in research or lab work as how will live on £16,000 a
- > year gross salary and having to repay university fees?
- > Nicola, Belfast
- >
- > Oooh, so some children don't like to sit down and learn stuff, I'd
- > never have thought it.... As principle Skinner said in the Simpsons: "Aaah
- > science, the joy of sitting down, staying quiet and paying attention"
- > AJ, Glasgow
- >
- > Science is stereotyped as nerdy just as politics is stereotyped
- > as boring and art as a doss subject
- > Amanda Freeston, Hampshire, Farnborough
- >
- > They make it sound like it is unexpected. I love Biology and Chemistry

Re : Turned off science

Re : Turned off science

- > but I am hopeless with physics. I am just starting my 2nd year of A-levels
- > in both Biology and Chemistry and it may not be easy but that doesn't
- > matter. Science is stereotyped as nerdy just as politics is stereotyped as
- > boring and art as a doss subject. I have been a voluntary class room
- > assistant for a science class and it is taught at theory level only. No
- > subject is interesting like that!
- > Amanda Freeston, Hampshire, Farnborough
- >
- > What's the point in learning maths or science? In Britain you'll earn
- > more as an astrologist, or feng shui consultant. Or a paper-shuffling civil
- > servant with huge final salary pension paid for by the taxpayer.
- > Jason Wilkins, UK
- >
- > Having spent a week in a local school encouraging pupils to consider a
- > career in science it does seem that most want to earn as much money as
- > possible with as little effort as possible. Is this really surprising given
- > society's current inclination towards the "fast buck" (e.g. personal injury
- > claims and bank loans)? As an aside, 29% say they would take physics were it
- > not compulsory – I'm pretty certain that 29% of students don't take physics
- > to A-level when given the option...
- > Phil, Oxford
- >
- > Surely 49% of children saying that science lessons are not boring,
- > confusing or difficult is a great result, given that it has probably always
- > been the norm for a percentage children to automatically say that school
- > lessons are just that, just because that's what you are supposed to say if
- > you don't want to get labelled as a nerdy goody two-shoes. I'm sure a lot of
- > science teachers out there go to great lengths to try and inspire children
- > despite the constraints of having to teach a pretty jammed curriculum... and
- > after reports like this wonder why they bother. Go science teachers!
- > Dug, Wimbledon, UK
- >
- > Well, I couldn't name either the "Dolly the Sheep" man or the head of
- > the Beagle mission either, and I'm interested in and follow modern science!
- > They just aren't pushed by the media as well-known names (the things they
- > did are pushed, but not the people behind them). And of course they are too
- > new to get into textbooks. When I did chemistry O-level in the early '70s we
- > did a lot of practical work and it was interesting. Not the "social effects
- > of chemistry", the real hands-on work. If that has been dropped in the name
- > of 'safety' (none of the science pupils at my school got injured, at least
- > when I was there!) it's not surprising that it has become dull and boring. I
- > applaud "Vic, UK"'s attempt to go beyond the dry syllabus and hope he is
- > rewarded for it (rather than punished for teaching something he's not
- > supposed to teach).
- > Chris C, Aylesbury, UK
- >
- > I am 18 and I have my A level exams starting on Monday in Biology,
- > Chemistry, Physics and Maths. I love doing science subjects. Its great
- > finding how things work. It can be dull at times but all subjects can be. I
- > think what is needed is more entertaining science teachers in secondary
- > schools.

Re : Turned off science

Re : Turned off science

- > Michael Smith, South Shields, UK
- >
- > Science teaching should start with the v young as a sort of Natural
- > Philosophy type thing so that 7–14 year olds would have a better
- > understanding of themselves and the world around them. They would then have
- > the tools to see through the pseudo science guff that is peddled to them
- > Rob , Plymouth
- >
- > Typically it goes like this: in the main section, you get doomsayers
- > using studies saying that we're not taking the risks of asteroid strikes, or
- > drink–related health problems seriously enough. In the lifestyle section,
- > there's another article telling you a glass of wine a day, or the latest
- > fad, will help you live long into retirement. Until we get more sensible
- > scientific journalism which doesn't just cherry pick the most sensationalist
- > stories for their own commercial gain, but rather form a balanced view based
- > on all the evidence available (isn't that the job of a journalist?), the
- > general public's perception of the value of science, and interest in
- > following it as a career, will continue to wane.
- > James, London, UK
- >
- > It's never really been cool to like science
- > Nikki , London, UK
- >
- > It's never really been cool to like science, most movies and TV shows
- > always portray the nerds as science geeks – self image is always important
- > at that age so it is difficult to admit it you like geeky subjects! My uni
- > has a project where some of its researchers teach part time in schools to
- > try and portray a more exciting image of science. It's fantastic to see the
- > excitement and interest when students come and visit our "real" lab and take
- > part in very basic experiments. Most school children want to know "what's
- > the point?" to everything so to see science being carried out in real life
- > situations not just in the class room, helps inspire them to think about it
- > as a possible career and not just boring lessons to drop as soon as
- > possible! If it is any comfort to Clara Kenyon, I think that when asked to
- > name a famous scientist, my fellow PhD students and I would also fail to
- > mention Ian Wilmut and Colin Pillinger and probably name one of those the
- > school pupils did.
- > Nikki , London, UK
- >
- > I was rather surprised to Clara Kenyon's surprise that people did not
- > name recent scientists as famous ones. Is that at all likely? I'm a
- > mathematics student, and know a fair amount of science, but if you ask me to
- > name one I am more likely to pick a historical figure. After all, it is hard
- > to tell who is going to be the most influential scientist when you are
- > living in the time. I am not surprised at all by this figure. Yes, science
- > is very interesting for those who get it, but to expect everyone to is to be
- > unduly optimistic. I do think society would be better off with everyone
- > having a better understanding of science, but some are just not meant to
- > progress any further than that.
- > Kieran Martin, Bath, UK
- >

Re : Turned off science

Re : Turned off science

- > Science is not as easy as some subjects thus less people want to study
- > it. Science and engineering has been vital to this country and the world in
- > the past and will be vital in the future. I would encourage the government
- > to reduce the financial hurdles to home grown students in science and
- > engineering in those areas crucial to the economy in which too few students
- > are at present studying.
- > Keith, London
- >
- > I'm not surprised. I like science and enjoyed it – completed two A
- > levels and currently studying it at university. But when our teacher at A
- > level said to us, in response to us saying the class was usually enjoyable,
- > "Chemistry, isn't meant to be fun!", that really killed a lot of enjoyment
- > in the subject. I think that's where some effort needs to be concentrated!
- > Josh, London
- >
- > I teach GCSE physics and chemistry, having previously had a long
- > career in science research. The children are right; the specifications for
- > these subjects are tedious. The coursework is more difficult than an EU
- > grant application! To make it interesting (and useful) I show them things
- > that aren't in the proper course. Also, I think that any student who is
- > naturally interested in science would look for other subjects because the
- > GCSE is so uninspiring.
- >
- > For example, there's precious little real chemistry in the chemistry
- > course. There's a great emphasis on safety – this should be taught
- > separately – and on the 'usefulness' of chemistry in society! Chemistry
- > should stand on its own feet. Lastly, we have academics complaining about
- > the lack of scientists. Well, I can tell you that it starts here at GCSE.
- > Incidentally, I already teach mobile phone technology, digital recording
- > systems (CD players etc) and photography and some food science to relieve
- > the monotony. And my lessons on safety are embellished with a career's
- > experience of lab accidents! I could go on about job prospects in science..
- > Vic, UK
- >
- > I am now coming to the end of a very long educational road – I'm
- > finishing my PhD in chemistry this summer. Over the years I have been ever
- > more unimpressed with the overall state of science education as I have seen
- > more and more of the whole story. Science in schools is taught in a bitty,
- > 'we can't do experiments in case we get sued way' resulting in a lack of
- > inspiration for most pupils despite some amazing teachers out there. Also,
- > this apathy I feel is indirectly affecting undergraduate science courses
- > trying to make up for lost time.
- > Richard, Birmingham, UK
- >
- > Science is difficult and complex – that's reality
- > Sean Peacock, Bristol
- >
- > I'm a science teacher in Bristol and this survey does not surprise me.
- > But that doesn't mean we need to try and "sell" science to the public and
- > pupils. Science is difficult and complex – that's reality. Trying to pretend
- > to make it anything less would be a lie. Pupils find it hard though because

Re : Turned off science

Re : Turned off science

- > they cannot concentrate and engage in the information. Look at independent
- > schools, why do they seem to be having success where state schools are not?
- > State schools have made too many concessions on making science a more
- > "accessible" subject.
- > Sean Peacock, Bristol
- >
- > I graduated Royal Holloway with a degree in physics last year, and I
- > can tell you why university level physics and chemistry is becoming less
- > popular. It's because of the hundreds of degrees now available which require
- > no academic ability and are simply seen as 'simple' or 'easy.' Degrees
- > should be challenging academically, that's the very basis on which the
- > university system is founded. If there's the option to do virtually no work
- > and still emerge with a BA in Flower Arranging, a vast majority will take
- > it, and the core subjects will lose out.
- > Jason Richardson, High Wycombe, UK
- >
- > Once again dumbing down in our schools has made the headlines. If you
- > want children interested in science exploit exciting science, such as the
- > new A380 and the advanced materials and modelling techniques used in its
- > construction or on the day we may decide to go into space remind kids that
- > science made it possible. Also remind them that from the clothes they wear
- > to the cars they drive in science made it all possible.
- > Chris Smith, Reading, UK
- >
- > Whenever I see survey results that suggest "young people think Madonna
- > is a scientist" or "British youth believes that Japan is a part of Europe" I
- > always wonder whether the kids are just taking the mickey.
- > Tamara, England
- >
- > So 49% of pupils don't think science lessons are boring, confusing or
- > difficult? That's not a bad percentage for subjects that have long been
- > associated with plaid shirts and pocket protectors. Hopefully the 16% of
- > children that don't want to choose science as a vocation will go on to be
- > musicians, artists, writers, bin men...
- > Adam McGee, Griesheim
- >
- > How dreadful that something should be difficult. Mind you, in today's
- > society it seems that reward for hard work is on the wane and popular films
- > seem to delight in stereotyping science as being nerdy, so should we really
- > be surprised at this?
- > JB, Bristol, UK
- >
- > In 1974 when I started my O level courses Science was not compulsory.
- > I never took any sciences, but most of my friends took one or more, I still
- > ended up with a good education & 11 O' levels. This just shows that it is
- > not just today's teenagers who will not take science subject, there is
- > always a certain percentage who back out.
- > My daughter is currently taking GCSEs and loves biology and chemistry,
- > but hates physics. I think it's really unfair that as a result of this her
- > grade will probably come down due to the fact that she will probably not get
- > good results in physics (it is a double award). Why can't they choose

Re : Turned off science

- > science as separate subjects, if it has to be compulsory can't they have a
- > choice, why all three?
- > Sharon Kinge, Milton Keynes, Bucks
- >
- > In response to Sharon Kinge's comment, there does actually exist a
- > triple science award, in which you take the three sciences separately, but
- > not all schools offer this. When I did my GCSEs I did this and had the same
- > thing but with Biology being my weaker subject. However, as I did them
- > separately, I still got As in physics and chemistry, as well as a C in
- > Biology. However, since then my old school has stopped offering the triple
- > award, and all students must now do the double, which is ridiculous.
- > James, Bristol
- >
- > Good grief? What is this? Pandering to the instant gratification
- > generation? Pretty well all achievements in science have been through
- > determination methodology and blind luck on an approx 50:50 mix. e.g the
- > transistor (blood sweat and tears) and the telephone (blind luck). Nothing
- > in science is easy. Then again who would want to be a scientist these days
- > given the typical salaries in the UK for research assistants and tech staff.
- > Prestige is one thing, being able to feed yourself and your family
- > comfortably is another.
- > Philip Copeland, Newry, Co. Down
- >
- > I think Philip Copeland has a point. It is difficult to keep up the
- > enthusiasm for science when salaries are so low. Also, jobs are not easiest
- > to find and are usually not permanent. This has not put me (or many others)
- > off wanting to do it, but I can see why people may opt out and go down
- > 'safer' routes.
- > Tijana Blanusa, Reading
- >
- > -----
- >
- >
- > 4. The Sunday Times – Review
- >
- > May 08, 2005
- >
- > Education: Science – in safe hands?
- >
- > Spider–hunting and blood sampling help to equip children
- > for later life, says Sian Griffiths
- >
- > Will held his middle finger tightly and squeezed. The
- > sterile lancet pierced his skin and a moment later a bead of blood oozed
- > out. He smeared it onto a slide, slid it under a microscope and discovered,
- > for the first time, that his blood group was AB+.
- > Will, 15, may not realise it but he is one of a few
- > children still able to do the kind of hands–on science that has been
- > outlawed by red tape and safety fears in many schools.
- >
- > When Andrew Allott, Will's teacher at Shrewsbury school,
- > posted a call in an e–mail discussion group for schools to reintroduce

Re : Turned off science

- > "blood practicals", his suggestion was greeted with remarks such as "mad"
- > and "hope you're not sued".
- >
- > "No state schools are doing the blood experiment any
- > more," he explains – it was banned a decade ago when worries about HIV
- > infection were at their height.
- >
- > So when he decided to do it at Shrewsbury, a boys'
- > boarding school, he felt like he was "putting his head on the block".
- >
- > But now it looks like Allott, a calm enthusiast who lets
- > pupils handle tarantulas in his lab and takes them on trips to track rare
- > species in the rainforests of Honduras, may yet have the last laugh.
- >
- > Boring, safe, anodyne science is switching kids off in
- > their thousands: numbers on A-level science courses are falling, degree
- > courses are unfilled, university chemistry departments are closing. If
- > teachers can't do interesting experiments and lessons end up "with kids
- > doing nothing but copying notes off the board, no surprise they are turned
- > off science", says Allott.
- >
- > Finally, the powers that be are waking up to the problem.
- >
- > Last week Sir Digby Jones, director-general of the
- > Confederation of British Industry warned head teachers that children must be
- > allowed to take risks. Jones said his worries extended to the curtailment of
- > the experiments and trips that made science fascinating.
- >
- > "As a nation we have got to make science interesting," he
- > said, and turn out inquisitive children eager to explore if we want to
- > compete economically and technologically in the future with countries such
- > as India and China.
- >
- > Jones is in favour of fizzing test tubes and bangs in
- > chemistry, the dissection of eyeballs and field trips to explore nature at
- > first hand.
- >
- > "But if you are a science teacher who is told that if he
- > takes a child out on a field trip he has to spend ages filling in forms and
- > then – if a child does what comes naturally (God made them inquisitive) and
- > there is a problem – you could be sued and might even end up in prison, why
- > would you bother?" Allott knows first-hand just how much red tape there is.
- > "The blood experiment took half a day of form filling, chats with the school
- > doctor and permission slips to all parents," he said.
- >
- > "If you are setting up a day in the hills it might take
- > one hour to assess the risks and fill in the forms. We have never not done
- > something because of risk assessment," he says. "But I can imagine other
- > schools thinking, 'Oh phooey, forget it'. Many schools now do not take kids
- > off site."
- >

Re : Turned off science

- > So how risky is it really? Not at all compared with the
- > kind of adventures Allott had as a teenager at Atlantic college in south
- > Wales – the ones that inspired him to spend his life teaching science. He
- > talks blithely of days spent on the hills and of racing dinghies in the
- > Bristol Channel.
- >
- > But now? Have any of his pupils ever had an accident? "No,
- > no," he says. "Some years ago we were out on the hills in north Wales and a
- > boy collapsed. He was unconscious for 40 minutes. We called the Sea King
- > rescue helicopter and went with him to hospital."
- >
- > Nobody found out why he had collapsed; he was fine
- > afterwards. As Allott says, the kids got to see what the RAF described as "a
- > textbook response" to the incident.
- >
- > For, at the end of the day, life is full of risks and it's
- > the children who have been taught to take them safely who will triumph.
- >
- > "I hope the tide will turn in favour of being able to do
- > exciting things safely," says Allott, already pencilling in his next school
- > outing: spider-hunting amid the peat bogs of an English Nature reserve in
- > Shropshire.

> 5. Young people are often turned off science

- >
- >
- > One of the key challenges facing our schools today is how to inspire young
- > people to be enthusiastic about science. Young people are often turned off
- > science before they even start to think about how important it has been to
- > our economic growth in the past, and how important it will be as we try to
- > address some of the major challenges that face this country in the future.
- > Environmental management is a key part of this future – how we manage our
- > natural resources that sustain life on the planet and we need the brightest
- > young minds to be turning their attention to these challenges if we are to
- > find pathways to a sustainable future.
- >
- > For young people to be excited by science and by some of the scientific
- > challenges Australia and the world face, they need to be taught by people
- > who are able to communicate the excitement of science, the scientific
- > process and the way science can help solve real problems. Young people need
- > Rscientists as role models :- they need to see that science can be fun,
- > does make a difference and is a tool for change for the public good.
- >
- > The RTeach Live pilot program is an innovative teaching opportunity
- > supported by Earthwatch Australia through funding from the Cass Foundation.
- > Four Victorian secondary science teachers will participate in two Australian
- > scientific field research projects from May 22 to June 4, 2004, and during
- > this time will communicate their scientific field experience back to their
- > students.

Re : Turned off science

- >
- > The program has been designed to:
- >
- > a.. bring the excitement of scientific field research into the classroom
- > linking Earthwatch scientists and teachers with students on–line.
- > b.. provide teachers with intensive training in scientific fieldwork,
- > conservation and the use of new technologies.
- > c.. promote collaboration among science teachers from different schools as
- > classrooms participate jointly in Rvirtual expeditions
- > In pairs the teachers will join a team of international volunteers from
- > around the globe to assist scientists with their research. The four teachers
- > aim to bring the excitement of scientific field research into their
- > classrooms via the internet, email, and satellite communication.
- >
- > Elena Nisiforou (Glen Waverley Secondary College) and Angela Ettles (South
- > Oakleigh College) will participate in the Echidnas and Goannas of Kangaroo
- > Island research project.
- >
- > Mark McTier (McKinnon Secondary College) and Cathy Nelson (Princes Hill
- > Secondary College) will participate in the Rainforests of Northern Australia
- > research project in far north Queensland.
- >
- > In the lead up to the fieldwork commencing the four teachers have been busy
- > developing lesson plans and activities relating to the research project they
- > will be involved with. The aim has been to integrate the research project
- > into the school program, engaging not only their own students but other
- > teachers and their students as well. The RTeach Live initiative will
- > involve students from science, environmental science and geography classes
- > from Years 7 – 11.
- >
- > After working all day in the field the teachers will write a daily journal
- > about their fieldwork, including photographs, which will be uploaded to
- > their website for their students to see. Students will be able to ask their
- > teachers questions about their daily activities, the scientific research and
- > conservation issues. The website will be an up–to–date bulletin for students
- > teachers and the wider school community to read about what their teachers
- > are doing on their projects.
- >
- > -----
- >
- > 6. No antidote to science phobia
- >
- > STUDENTS are being turned off science in their droves – but the reason
- > remains a mystery.
- >
- > This year physics saw the biggest drop in numbers with 3% fewer pupils doing
- > the exam. Chemistry saw a drop off of 1.5% and biology of 0.8%.
- >
- > So why is the white lab coat so uncool?
- >
- > Heather Guy, acting head teacher at Whitchurch High School in Cardiff,

Re : Turned off science

- Previous by thread: ***Re: the Reals really have negative curvature built-in and negative-Reals are superfluous***
- Next by thread: ***Re: Turned off science***
- Index(es):
 - ◆ ***Date***
 - ◆ ***Thread***