

Hi, I was finding it difficult to find work and further reading for my a-level subjects and I am sure you are too! We thought we would each write a piece on a subject we were passionate about which would help you with your further reading and reading around the subject. Hope this is useful!

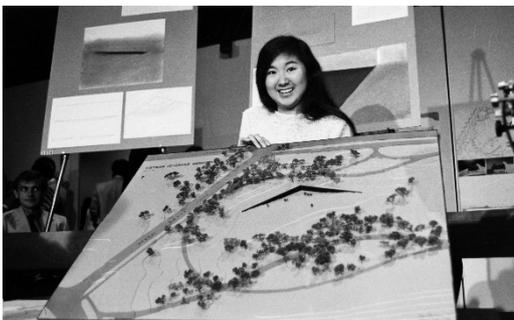
ART

Further reading: Maya Lin

Maya Lin is apart of the minimalist and earth art movements and is a great artist to read further into if you are considering careers in architecture, sculpture of environmental art. Maya Lin's first commission would make her one of the most innovative artists of the 20th century. Her Vietnam Veterans Memorial in Washington, D.C., a city known for its imposing monuments, is now one of the most iconic sights. Her use of a spare, low-slung wall to trace the line of the natural landscape became her trademark.

Her minimalist approach to public art is to add something that looks like it was not originally there, but somehow belongs. Swells of earth interrupt the grassy terrain ever so slightly in her outdoor installations, so that if one is not viewing the work from high above or far away, one might not even notice them. The indoor sculptures on which she has focused recently maintain an implicit environmental focus, ideologically and visually evoking the rolling contours of remote geographic locations. In a career that began with controversy, Lin's 35-year record of public and private art successfully merges the conceptual and natural world.

<https://www.pacegallery.com/artists/266/maya-lin>



BIOLOGY

Scientists discovered a set of enzymes to create glowing organisms

In daylight, *Neonothopanus nambi* is an unremarkable brown fungus. At night, the fungus glows ghostly green, it is one of over 100 species of mushrooms that emit light. Now, an international collaboration between twelve different institutions led by Ilia Yampolsky, with the participation of Fyodor Kondrashov, Louisa Gonzalez Somermeyer have identified the biochemical pathway that allows bioluminescent fungi to light up. A substance called luciferin is oxidized with the help of the enzyme luciferase to emit a light. It is a natural phenomenon found in many species, from Flitting fireflies and glowing worms to deep-sea fish and mushrooms on the forest floor. The scientists found the key genes responsible for the bioluminescence of *Neonothopanus nambi*, using library screening and genome analysis and showed that the substrate for the bioluminescence reaction, is only two enzymatic steps away from a well-known metabolite, called caffeic acid, which the fungus generates

The team compared mushrooms that glow with those that don't, to uncover how gene duplication allowed bioluminescence to evolve more than a hundred millions of years ago. The researchers then inserted the three genes necessary along with three other genes to generate luminescence, into a non-glowing *Pichia pastoris* yeast, resulting in glowing colonies of yeasts.

Date: November 28, 2018 Source:

<https://ist.ac.at/nc/news-media/news/news-detail/article/scientists-discovered-a-set-of-enzymes-to-create-glowing-organisms/6/> - Institute of Science and Technology Austria



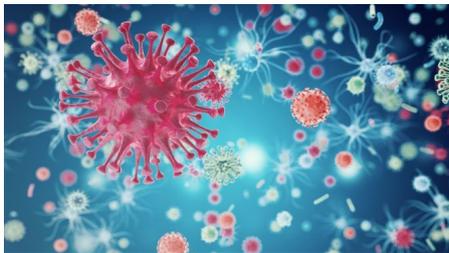
CHEMISTRY

New research finds that an HIV enzyme plays a crucial role in driving Alzheimer's-related brain pathology by altering the APP gene:

Alzheimer's disease is the 6th leading cause of death in the United States and has no known cure. Currently, 5.7 million people in the US are living with the condition, and the Centers for Disease Control and Prevention (CDC) predict that the burden of the disease will double by 2060.

The APP gene encodes a protein called amyloid precursor protein found in the brain and spinal cord, among other tissues and organs. Through experiments, scientists have found links between mutations in this gene and the risk of early-stage Alzheimer's disease. The new results suggest that antiretroviral therapies that are currently used to treat HIV may be useful for treating Alzheimer's too. A doctor and his team in the US used cutting-edge analysis techniques that focused on single- and multiple-cell samples to study the APP gene in Alzheimer's and healthy brain samples. The team suggest that antiretroviral therapy that blocks the reverse transcriptase may be a successful treatment for Alzheimer's.

To find out more about this discovery please visit <https://www.medicalnewstoday.com/articles/323797.php>

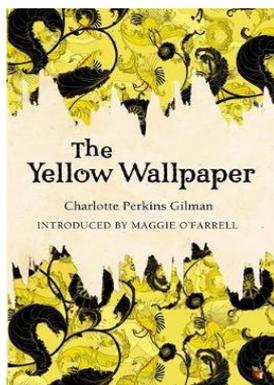


ENGLISH

The Yellow Wallpaper-Charlotte Perkins Gilman

The short novel "The Yellow Wallpaper" is written from the unique perspective of a female writer in 19th century America. It deals with controversial issues of the time such as; the fragility of marriage in the 19th century, social pressures on women and the idea of women being trapped in the patriarchal society of the 19th century. The lack of pattern within the yellow wallpaper could represent the lack of the main characters self-identity and confusion. Her imprisonment is metaphorical of the treatment, status and position of women during the period in which the novella is written. It delves into the psychological struggle of restriction.

Take a look it is a short and thought provoking read:
<https://www.gutenberg.org/files/1952/1952-h/1952-h.htm>



ECONOMICS and BUSINESS STUDIES

WHY THE "BIG 4" COULD BECOME THE "BIG 3"

In the past, the UK's market for supermarkets has been dominated by the "Big 4"; Tesco, Asda, Sainsbury's and Morrison. Yet recently there have been talks of a merge between two of these firms, Asda and Sainsbury's. Asda and Sainsbury's account for over 30% of the market of grocery stores in the UK. The merger will mean these two well-known grocery stores will become the most powerful firm in the market, overtaking the UK's past biggest supermarket; Tesco. The pros of this union has been made clear by both firms, of which include a 10% cut of prices on food in their stores and that there are no plans of store closures. Yet this £12bn deal faces investigations to whether the outcome will be of the best interest for their UK shoppers. The CMA (Competition and Markets Authority) have recently investigated whether this tie-up could lead to higher prices, less choice as well as a decrease in the quality of their goods. Furthermore, if the deal was approved, it would result in at least 75 store disposals to ensure that competition did not suffer. Thus leading to a flurry of unemployment from the workers of these disposed stores.

Sainsbury's

ASDA

FRENCH

Over the last couple of weeks in France, there have been significant protests against the high taxes and living costs that residents have to pay, and criticism of Macron's economic policies. The group of protesters have been named the "gilets jaunes" for wearing yellow high-vis vests, which are required by law in every vehicle, and at least 75,000 people have been spotted all over the country, specifically in Paris. The protests reached a climax after supposed 'peaceful' demonstrations took place on the Champs-Élysées, in which six buildings were set ablaze and statues at the Arc de Triomphe were smashed. The police intervened by using tear gas, stun grenades and water cannons on the crowds, injuring at least 110 people. Emmanuel Macron responded by saying that his fuel policies were needed in order to combat global warming. On the 4th of December, the PM, Édouard Philippe has said that they will now suspend the fuel tax rise, due to the widespread damage caused by the resulting protests, in which three people have died and widespread violence and vandalism have taken place.

To read more about this, visit: <http://www.lefigaro.fr/>
<https://www.lemonde.fr/> <http://www.leparisien.fr/>
<https://www.la-croix.com>

GEOGRAPHY

A major 7.0 magnitude earthquake hit Alaska on Saturday 1st December causing extensive damage to the region. The quake was centred 11 miles away from Anchorage, Alaska's largest city and first reported at 8:29 local time, with a series of aftershocks soon after reaching 5.9. Around 40 more shocks were reported with seismometers picking up the quake thousands of miles away in Boston. Soon after the initial quake a tsunami warning was issued to coastal areas but was later cancelled. Around 100,000 people were left without power on Saturday and residents have reported collapsed buildings and bridges. Parts of a highway have sunken in and disappeared, Chief Doll states that this significant damage will take a long time to repair and the quake will most likely have repercussions on the whole of the state. Despite this there have been no reported casualties thus far; local people have been asked to check on neighbours and work together with their communities to start recovery. Earthquakes are common in Alaska due to its position on the ring of fire – a ring of volcanoes, earthquake sites and tectonic plates around the Pacific, stretching from South America to New Zealand. However most take place deep beneath the earth or far out to sea, with no major issues.



GERMAN

Berechnen schlechtem Umweltverhalten in Deutschland

„Steuern sie das Schlechte, nicht das Gute“ ist die Devise eines Steuer dass einen hohen Preis auf umweltfeindlich Aktivitäten bringt, besonders fossile Brennstoffe Verwendung. Deutschland hat eine Erdölsteuer seit 1951 und wenn es sich in 2007 aktualisiert hat, wurde es auf 65 Cent pro Liter angehoben. Das Geld durch die gesammelte Steuer wird zum Ausgleich von Kosten an anderer Stelle verwendet.

„Ökosteuern“ werden verwenden, Lohnsteuer heruntersetzen damit die deutschen Arbeiterschaft machen mehr wettbewerbsfähig weltweit. Die Ökosteuern gilt nicht nur für Benzin oder Diesel (für Behelfe) aber für Heizöl und fossile Brennstoffe zur Stromerzeugung.

HISTORY

The Wars of the Roses plunged the UK into civil war and lasted 32 years. Initially the fighting began over who had the control of the mentally ill Henry VI. Although the term 'the Wars of the Roses' was not used at the time, but described as the 'Cousins War', the roses represent the red rose of Lancaster and the white rose of York, which was combined to form the Tudor rose, when Henry VII married Elizabeth of York and brought the war to the end in 1485. Their descendants would be half Lancastrian and half York, and therefore would not be challenged by either side. The fighting involved the descendants of Edward III, relating to its name as the 'Cousins War'. Henry VI married the strong Margaret of Anjou, whose court and advisors were named Lancastrians after Henry Lancaster, the king. When Richard of York, Henry VI's cousin became 'protector of the realm', he firstly dismissed some of the queen's advisors creating bad feeling. After Richard of York was dismissed after the recovery of the king both sides began to recruit an army, and chose a badge, their respective roses. The weak king was unable to stop them and they went to war, beginning the Wars of the Roses.



MATHS

Riemann hypothesis

One of the world's most respected mathematicians showed how he solved the Riemann hypothesis, a 160 year old mystery, at a lecture in late September of this year. If his solution of the hypothesis is confirmed he will be awarded £760,000. The mathematicians name is Sir Micheal Atiyah and he already has a very high profile in mathematics due to him winning the two biggest awards in mathematics – the Fields Medal and the Abel Prize. In order to solve the Riemann hypothesis, you need to find a way to predict the occurrence of every prime number, even though primes have historically been regarded as random. The hypothesis says that the distribution of primes is not random, but could follow a pattern shown by an equation called the Riemann zeta function. So far 10,000,000,000,000 prime numbers have been checked and are consistent with the equation, but there is no proof that all primes follow the pattern. Sir Michael said he used work from John von Neumann and Friedrich Hirzebruch to help him on his way to solving the problem.

To find out more about his solution visit:

<https://www.independent.co.uk/news/uk/home-news/riemann-hypothesis-uk-mathematics-solved-claim-sir-michael-atiyah-a8557656.html>

MEDIA STUDIES

Further viewing: Kiss Me Deadly, 1955, (dir. Robert Aldrich)

A prime example of original cycle noir, including the femme fatale and seeker-hero protagonist, Kiss Me Deadly is a useful example to use in noir essays and can further enhance your understanding of the genre. It was one of the first films to utilise the McGuffin.

The film serves as a metaphor for the paranoia and nuclear fears of the Cold War in which it was filmed. "The great whatsit", as Velda refers to the small, mysterious valise at the centre of Hammer's quest, is hot to the touch and contains a dangerous, glowing substance. It comes to represent the 1950s Cold War fear and paranoia about the atomic bomb. The film has been described as "the definitive, apocalyptic, nihilistic, science-fiction film noir of all time – at the close of the classic noir period".

Kiss Me Deadly can also help you to strengthen your contextual knowledge of 20th century America and critical analysis of cultural artefacts, which is a transferrable skill that you can apply to the War of the Worlds radio broadcast.

<http://www.noiroftheweek.com/2007/07/restoration-of-kiss-me-deadly-1955.html>



PHILOSOPHY

PHYSICS

COMING NEXT WEEK

POLITICS

On the 11th of December, MPs will be voting on a Brexit deal in parliament, but what does it actually say? If an EU and UK trade agreement couldn't be finalised 6 months before December 2020, and the UK and EU did not jointly extend the transition period, then an Irish hard border could come into place. Terrorism activity is one of the many undesirable aspects of a hard border, as the IRA believe in a united Ireland. The UK must also observe 'a level playing field', which means that we would not undercut EU industry. Brussels has also agreed on a 'dynamic alignment', meaning that new EU regulations would be cut and pasted into UK law when it is passed. The EU has repeatedly said that it would only allow British seafood exporters tariff- and quota-free access to EU markets in exchange for a reciprocal agreement that EU fishing fleets can continue to operate in British waters. The draft agreement gives London Financial centre only basic level to the EU markets similar to the US and Japans access, possibly indicating a reduce in trade.



PSYCHOLOGY

How technology positively impacts a babies' development.

A psychologist called Dr Tim Smith carried out a set of 3 examinations on both tech-using babies and non-tech using babies to see how their development differentiated.

Firstly, he examined how well the babies could walk in a straight line. Both the tech users and non tech users showed signs of being able to successfully do this.

Secondly, he examined how well they could draw a straight line. The non tech users couldn't complete this and needed to improve their hand control however, the tech users could draw accurate straight lines.

Finally, he examined how well they could build towers. The non tech users built an averaged 5 block tower and the tech users built an averaged 7 block tower.

Over all he found that the tech users had highly advanced motor skills which is thought to be because of the fact that tapping and swiping encourages precision and dexterity. Therefore, this shows that tech-using babies are definitely not further back in their development as people would assume, but in some cases more advanced in their development than non-tech using babies.

