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Mystery and Wonder



<https://www.publicdomainpictures.net/es/view-image.php?image=536646&picture=calle-espeznante-de-halloween>

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Bay Area Halloween 2025

As autumn arrives in the Bay Area, a season of spooky fun unfolds with glowing jack-o'-lanterns and festive decorations. In 2025, the region is packed with Halloween celebrations for all ages, from pumpkin patches and haunted houses to vibrant neighborhood parades.

Treasure Island Harvest Festival

San Francisco's Treasure Island hosts the annual Harvest Festival & Pumpkin Patch, a beloved family tradition. On the first weekend of October, the island comes alive with pumpkin picking, hay bale climbing, and bounce houses. While kids enjoy a petting zoo and crafts, parents can relax with coffee and live music. This free festival celebrates community and autumn traditions over scares.



<https://www.pickpik.com/halloween-ghosts-pumpkin-happy-halloween-ghost-autumn-131602>

Filoli by Day and Night

The historic Filoli Estate in Woodside offers a unique Halloween experience that transforms from day to night. By day, families can enjoy a Witches' Tea with storytelling and sweets in a fairy-tale setting. As evening falls, the grounds begin to glow, leading guests through surreal, candlelit landscapes. Designed to immerse rather than terrify, the experience blends beauty with mystery, making it an elegant and unforgettable Halloween outing ideal for romance or photography.

The Haunted Hangar

The Hiller Aviation Museum in San Carlos transforms its hangar for Halloween, blending aviation history with spooky fun. The seasonally decorated museum welcomes costumed children to explore among the aircraft and enjoy hands-on activities like Paint-a-Plane and scavenger hunts. The highlight is the final weekend's helicopter pumpkin drop, where pumpkins are released from the sky to the crowd's delight. It's a perfect blend of education and seasonal fun for families who love science and technology.



<https://www.deviantart.com/favorisxp/art/Scary-Pumpkin-Halloween-Animated-Wallpaper-1107051948>

The Bay Area's Halloween is as diverse as the region itself, offering everything from sunny pumpkin festivals at Treasure Island and elegant, candlelit gardens at Filoli to inventive fun at Hiller Aviation and the warmth of local parades. More than just a single night, it's a month-long celebration of imagination and community. Whatever you're seeking this October, the Bay Area has carved out a special Halloween experience for you.

Decoding the Nobel Prizes

Every golden autumn, the world turns its eyes to Stockholm and Oslo for the Nobel Prize announcements, which in 2025 will unfold between October 6 and 13. More than just the highest honors, these prizes serve as a compass, celebrating the marvels that drive civilization and guiding our anticipation of the future.

2025 Nobel Prize Calendar

Physiology or Medicine Prize	October 6
Physics Prize	October 7
Chemistry Prize	October 8
Literature Prize	October 9
Peace Prize	October 10
The Nobel Prize in Economic Sciences	October 13
Award Ceremony	December 10

A Look Back at the 2024 Nobel Prizes

The 2024 Nobel Prizes painted a clear picture of our time, highlighting two dominant themes: a scientific revolution powered by Artificial Intelligence and a profound call for humanity and peace.

The Nobel Prize in Physics honored AI pioneers John J. Hopfield and Geoffrey Hinton, whose foundational work on neural networks and learning algorithms paved the way for modern marvels like ChatGPT and AlphaGo.

The Nobel Prize in Chemistry honored David Baker, Demis Hassabis, and John Jumper for AlphaFold, their revolutionary AI that predicts protein structures in minutes, accelerating new drug discovery and solving a half-century-old biological puzzle.



The Nobel Prize in Physiology or Medicine was awarded to Victor Ambros and Gary Ruvkun for discovering microRNAs, the tiny "master regulators" that fine-tune gene expression and open new frontiers in fighting diseases like cancer.

Beyond the frontiers of science, the Nobel committees also turned their focus inward, exploring the complexities of the human condition.

The Nobel Prize in Literature was awarded to South Korean author Han Kang, whose calm yet soul-piercing writing confronts historical trauma and the fragile parts of humanity.



https://stockcake.com/i/futuristic-science-exploration_146346_18928

The Nobel Peace Prize was awarded to Nihon Hidankyo, an organization of Hiroshima and Nagasaki survivors whose lifelong advocacy for a nuclear-free world serves as a stark reminder to safeguard our future.

The Nobel Prize in Economic Sciences honored Daron Acemoglu, Simon Johnson, and James A. Robinson for their compelling research arguing that national prosperity fundamentally depends on "inclusive institutions" that foster fairness and innovation.

The 2025 Forecast

As we look ahead, the following forecast is not based on speculation, but on insights from the scientific community and authoritative "Nobel predictor" awards. These influential sources suggest the 2025 Nobel Prizes could honor marvels in these exciting fields:

A Revolution in Metabolism: The science behind new-generation drugs that have transformed the treatment of obesity and diabetes is a leading contender, with its discoverers already honored by major predictor awards for their immense impact on global public health.

A New Frontier in Cell Biology: A groundbreaking discovery, known as "liquid-liquid phase separation," has revealed a new principle of how cells organize themselves. Authoritative analyses suggest this finding, which rewrites biology textbooks and offers new clues into neurodegenerative diseases, is ripe for Nobel recognition.

The Dawn of the Quantum Age: Following recent awards in quantum theory, many experts predict the next logical step will be to recognize the pioneers of quantum computing and quantum information, technologies poised to reshape our world.

Chemistry for a Greener Planet: According to data-driven forecasts, groundbreaking work in sustainable chemistry—such as advanced batteries, green catalysts, and innovative materials for carbon capture—remains a top candidate as the world seeks solutions to the climate crisis.



Humanities in the Post-AI World: While harder to predict, discussions in academic circles suggest that future prizes will address the profound ethical and societal challenges of our time, including AI governance, digital privacy, and new approaches to global peace.

AI Transparency and Safety Regulations

Politics is boring and meaningless for high school students; it seems only politicians and lawyers care about it. However, the new laws about artificial intelligence (AI), called “AI transparency and safety regulations”, may change our stereotype. They have been drafted by several states in the U.S., including California and New York, in recent years. From my point of view as a high school student, these laws are closely connected to our lives and studies, and they may even change the world we will step into in the near future.



Different states have different regulations and approaches. For example, New York passed the RAISE Act (Responsible AI Safety and Education Act) in 2024. It mainly targets frontier AI models, which means robust AI systems, vast computing power, and critical areas like national security, health care, or the financial system. The law requires AI companies to publish detailed safety and security documents before releasing their models. In the papers, the companies must detail and clearly explain how they tested their models, how they will prevent misuse, control risks, and who will take responsibility if something goes wrong, and report it to the state. This is similar to a science experiment. Teachers regularly ask students to write a lab safety and procedure before we start it, so that students know how to prevent risks and what to do if an accident happens.

On the other hand, the California AI Transparency Act focuses more on everyday life. It requires a clear text to be labeled in AI-generated content, such as photos, videos, music, or even essays, so people can

recognize if AI generated the content. Social media platforms and device makers must also follow the rules, ensuring users can differentiate between real and AI-made content. For students, this is very helpful. Imagine seeing some shocking news on Instagram or TikTok, but that turns out to be fake and created by AI. This could be scary and misleading. With proper labeling under the rules required, we would have a better chance of recognizing what is trustworthy and what is not.

AI should not be a black box; this is the core idea of these regulations. In school, teachers not only want the final answer in math class, but they also want us to show the detailed steps. Similarly, AI companies must tell the public how their systems work or describe their safety measures. And if AI makes a mistake, they must explain why and how they will improve their AI and prevent the same issue from happening again, just as students must clarify if they make an error in an experiment. The overall goal is to protect safety.

These laws will profoundly influence our learning and social lives. In the future, schools may use more AI-powered learning tools. With transparency rules, teachers could know which parts are created by AI and which are original students' work. This helps teachers see how the students do their work by themselves. Similarly, as AI essay creators or image/video generators become more common, labels and disclosure requirements will protect academic integrity. Teachers can still fairly grade student effort, and students won't feel pressured to compete with AIs.

Our future careers are close to these regulations, too. As senior high school students, we consider college majors and future jobs. If I choose to study computer science, data science, or engineering, these laws may directly ask some companies to hire engineers who are familiar with these laws. Now new careers are emerging, like AI



<https://www.questcover.com/news/ai-in-the-workplace-do-employers-need-a-policy/>

safety testers, who examine whether the company's AI systems have dangerous flaws; algorithm fairness auditors, who check if the AI model has bias and discrimination; and AI compliance officers, who help companies obey complicated rules. This is both a challenge and an opportunity for high school students in our generation. Knowing these laws might give us an advantage later in college or the workplace.



<https://thegateuchicago.com/2025/02/18/the-ai-regulation-tango-navigating-the-shifting-landscape-of-2025/>

However, there are still many limits and difficulties. One big problem is that different states or even countries have different standards. A worldwide company must prepare multiple versions of compliance documents, which could slow innovation. It's like I have to prepare for both the SAT and the ACT simultaneously; it takes more effort and creates stress. Another problem is that transparency does not mean asking AI companies to reveal all things. Companies are still allowed to hide trade secrets. From a student's perspective, this feels like when a teacher only shows you the final answer but refuses to teach you the solution steps. You get some information, but not the whole picture. Partial transparency is better than none at all for now, because we must take the first step.

In conclusion, AI transparency and safety regulations are not far-fetched or irrelevant for high school students. They affect our studies, social media lives, and career paths. These laws represent an attempt to find balance between innovation and safety. By the time we graduate and become adults, AI will no longer be just a headline in the news; it will be part of our everyday reality.

Smart Glasses

Meta released Ray-Ban smart glasses at the 2025 Meta Connect conference. These glasses can take photos, record videos, make calls, project navigation guidance, translate subtitles, and receive notifications directly onto the lenses. They significantly improve display brightness, battery life, and voice recognition accuracy compared to the previous generation. The most eye-catching innovation is the Neural Band, which captures myoelectric signals caused by subtle finger movements. This combination demonstrates the new possibilities of integrating smart glasses with neural interfaces.



https://commons.wikimedia.org/wiki/File:Ray-Ban_Stories,_Feedback_LED,_and_Case.jpg

Looking back to 2013, Smart glasses are no longer science fiction. The latest model blends a lightweight frame with all-day battery life; at the same time, digital information is seamlessly overlaid onto the real world, which brings navigation, photography, and reminders directly into view. However, it eventually failed in the consumer market because of its bulky design, short battery life, and privacy concerns. Then in 2015, Microsoft released the HoloLens, aimed at industrial, educational, and medical use. It aims for the professional market. From

In the 2020s, more companies, such as Meta, Apple, Huawei, OPPO, and Xiaomi, looked for a piece of the pie. Meta focused on social networking, Apple launched Vision Pro for immersive experiences, and Chinese manufacturers emphasized lightweight, daily-use functions. Today, the market is divided into two main routes: lightweight consumer products for entertainment, and professional devices for industry, healthcare, and training use.

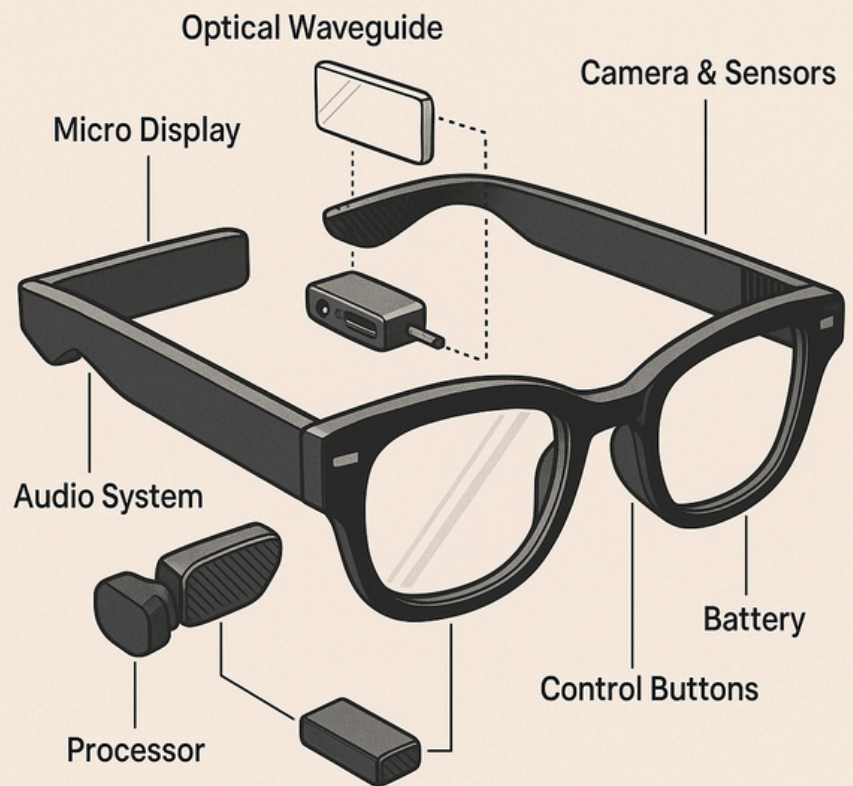


https://commons.wikimedia.org/wiki/File:Google_Glass_Main.jpg

On the consumer side, the functions of smart glasses are becoming diverse. Selfies have become popular among travelers and sports amateurs, offering a new way to share life and events with family, friends, and strangers. Navigation and mapping functions help users to walk through unfamiliar streets without constantly looking down at their phones. Real-time translation helps overcome language barriers, which is beneficial for travel abroad. AR glasses like XREAL work like a giant screen for entertainment, increasing immersive experiences for movies and gaming. HoloLens shows strong value in remote healthcare, equipment maintenance, and training in professional fields, enabling doctors, engineers, and students to access information more efficiently.

Smart glasses are highly integrated, including: an optical display module, such as MicroLED, projecting clear images; cameras and sensors for capturing the environment and user actions; a processing chip handling data processing and image rendering; and battery units providing power. At the same time, bone-conduction or directional speakers and high-sensitivity microphones offer private audio interactions, while wireless communication modules (Bluetooth, Wi-Fi, 5G) ensure stable connections with smartphones or the cloud. All these components are compressed into a lightweight frame.

Smart glasses on the market face multiple shortcomings: long wear makes users uncomfortable, battery life is limited to meet all-day needs, gesture recognition lacks precision, voice commands are easily disrupted by noise, and display quality often struggles under bright sunlight and can cause eye strain after long use.



Some promising advanced optical technologies may improve users' experiences. Waveguide displays can significantly reduce the thickness of display modules, enhancing comfort. MicroLED is especially suitable for outdoor use because of its high brightness and low power consumption. Meanwhile, varifocal lenses automatically adjust focus according to the user's gaze distance. If these technologies mature, smart glasses may one day provide a display experience as natural as the human eye.

Batteries are one of the most significant bottlenecks. Solid-state batteries may offer higher energy density and greater safety in small sizes, silicon anode batteries could significantly decrease size, and flexible batteries may be embedded in the temples or frames to distribute weight more evenly. Additionally, wireless charging could be easy and fast. With these advancements, smart glasses may support true all-day wear.

Interaction is the key role too. Eye-tracking could allow users to make selections with just their gaze, and high-precision gesture recognition would enable more precise control. Neural interfaces open even more possibilities. Once these technologies are implemented, users may only need a glance or a slight finger movement to complete complex operations.



<https://freerangestock.com/photos/97325/glasses-on-top-of-book.html>

Smart glasses will definitely change our daily lives in the near future. They will be as lightweight as regular glasses, comfortable for wear; batteries just one charge per day; their interactions natural, controlled by gaze, gestures, or even thought; and their applications help users spanning classroom learning, remote work, travel, and shopping. At that point, smart glasses will no longer supplement smartphones, but may become the next generation of smart terminals, bridging humans and the digital world.

New Artemis II Progress

In late September 2025, NASA updated its significant progress provided a substantial update on the Artemis II mission. After several years of uncertainty, the agency confirmed that the launch is scheduled between February and April 2026. The announcement shows a big step. This announcement marks a significant step in NASA's effort to return humans to the Moon for the first time in about half a century.

In 2022, NASA started the Artemis I project and successfully launched an uncrewed Orion, which completed the Artemis I mission, successfully launching the capsule, which orbited the Moon. The Artemis II mission was initially planned to launch as early as 2024, carrying four astronauts for a 10-day journey around the Moon, then safely returning to Earth. The purpose was to test Orion's life support systems, navigation, and re-entry performance in preparation for Artemis III, the first lunar landing mission of the program.



However, from the start, Artemis II faced enormous difficulties. The Space Launch System (SLS) rocket has been criticized for its high cost and complex supply chain, although it is the world's most potent. Congress funding debates pressured NASA to justify expenses while meeting public expectations. More critically, Artemis I revealed technical challenges that directly affected Artemis II.

Orion's heat shield was the most obvious problem. During the Artemis I mission, the shield eroded in ways that engineers did not predict, increasing concerns about whether the spacecraft could safely protect astronauts during re-entry to Earth, and leaky valves in the propulsion system and defects in wiring harnesses that required extensive rework.



Meanwhile, budget negotiations in Washington, D.C. indicate the pressure of balancing the Artemis program and other critical national projects. With the billions already spent on SLS and Orion, critics questioned whether commercial companies might eventually do the same job more cheaply and efficiently. NASA's leadership, however, emphasized that Artemis represented not just a technical project, but a geopolitical commitment to maintain American leadership in space exploration.

While it finally launches, Artemis II will take its four-member crew, three Americans and one Canadian, on a ten-day flight around the Moon. The mission will test: Orion's life support systems, Communications, navigation, and re-entry at lunar return speeds.

One small change from the original plan is the mission profile: NASA has adjusted flight trajectories and test protocols to reduce heat shield concerns. Engineers have built additional safety margins, and the agency is confident that the spacecraft can return its crew safely, even with the shield's unusual erosion.

Artemis II is the gateway to Artemis III, the mission intended to land astronauts on the lunar surface, currently scheduled for 2027 or later. Success in 2026 will validate not only Orion and SLS but also the readiness of international and commercial partners.

Already, work is advancing on the Human Landing System (HLS), provided by SpaceX's Starship, and on the Gateway lunar outpost modules contributed by Europe, Japan, and Italy. Every test on Artemis II will inform how these pieces fit together into a sustainable architecture for lunar exploration.



The story of Artemis II is one of ambition tempered by reality. Proposed as a return to the Moon, it has experienced technical flaws, financial reduction, and long delays. Yet, the mission is back on track with the new launch date set for early 2026. If it succeeds, Artemis II will prove NASA's ability to send humans safely around the Moon, pave the way for humanity's return to the lunar surface, and, eventually, the leap onward to Mars.



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