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Your generated images will be more polished thanever.See What's NewExplore how consumers want to see climate stories told today, and what that means for yourvisuals.Download Our Latest VisualGPS ReportWant to give your brand videos a cinematic edge? Join our visual experts and special guests for an info-packed hour of insights to elevate your next video project. Tune in on June 24 at 11amET.Register NowEnjoy sharper detail, more accurate color, lifelike lighting, believable backgrounds, and more with our new model update. Your generated images will be more polished thanever.See What's NewExplore how consumers want to see climate stories told today, and what that means for yourvisuals.Download Our Latest VisualGPS Report To determine the pH value of a solution, so-called pH meters or pH measuring instruments are used. These determine the value in an electrochemical manner, which is why they must becalibrated regularly. You can find out here which different devices are available, how you can calibrate a pH meter and what time interval you should pay attention to. Calibrate various PH measuring instruments Not all measuring instruments are the same: When it comes to determining the pH value,several variantsare possible. And the pH meter operation also plays a crucial role. Nowadays, pH meters with glass membranes or those with ion-sensitive field-effect transistors (ISFET) are particularly common. Devices with glass membrane These meters are widely used and can be found in chemical laboratories as well as in the food industry. They use thepotential of a glass electrode, which is therefore also called a pH electrode. A half-cell reaction results in the formation of an electric potential, which is directly related to the H+ ion concentration present. In addition,a reference electrode(usually a silver-silver chloride half cell) is connected to a combination electrode in the glass electrode. During the actual measurement, a loadable current is generated so that a voltage is produced from the potential difference to the reference electrode the pH value can thus be mapped approximatelylinearly. Before purchasing, however, it should be taken into account that the low loading capacity of the measuring potential allowsa slight disturbanceof the measurement, which can happen, for example, due to flow potentials. Impurities and leaching also quickly lead to measurement errors. Devices with ISFET In contrast, newer measuring devices are based on an ISFET principle (ion-selective field-effect transistor). This pH meter mode of operation is based onan integrated electronic circuit, so the process is somewhat more stable and robust thus, malfunctions can be better avoided. However, the service life of the sensor is lower, both in terms of durability and the number of measurement operations. With regard to the possible areas of application and the calibration of the pH electrode, there are onlymarginal differencesbetween the two variants, so that the individual advantages and disadvantages should be weighed up. The ISFET devices are nowadays also found in industry, medicine and in swimming pools. Calibrate pH meter: Instruction The longer a pH meter is in use, the higher the probability that measurement errors will occur. This is simply due to the fact that theliquid contained in it ages and the degree of contamination increases continuously. Sinceinaccurate readingswould be disastrous in many industries, it is necessary to calibrate the pH tester and that also means regular cleaning of the PH electrode. This is quite simple and differs only slightly between the devices in terms of procedures. The basic procedure is as follows: Adjust the temperature:It is important that the buffer solution and the instrument are at exactly the same temperature during calibration. This should ideally be achieved with an automatic temperature compensator. Check electrode:The first step is to check the electrode. If this is defective, it must be replaced. Preparation:If a new electrode is used, it must first be stored in a beaker with storage liquid for about four hours. Setting:The instrument must then be set from MTC (Manual Temperature Compensation) to ATC (Automatic Temperature Compensation) or pH so that it can operate automatically. Immerse electrode in pH 7.0:Next, place a clean electrode in a fresh buffer solution with a pH of 7.0. The reading of the pH meter must also be set to exactly 7.0. The voltage at this measuring point represents the baseline. Rinsing (single-point calibration):The first rinsing of the electrode with demineralized water follows. After that, the first part of the calibration the so-called single-point calibration is completed. Immerse the electrode in pH 4.0:The two-point calibration follows. To do this, the same electrode is now immersed in a buffer solution with a pH value of 4.0 (or optionally 10.0). Again, the correct reading must be set on the meter. Rinsing (two-point calibration):Finally, the electrode is rinsed a second time. After this, the two-point calibration is also completed and the pH meter is ready for use again, since two measuring points have been determined for the linear progression of the voltage. Calibrate pH meter: digital and manual In the case of pH meters, a further distinction is also possible between digital and manual meters. Although they differ slightlyin structure,there are only minimal differences in the respective calibration. Digital pH meter Digital pH meters are widely available and may differ not only in size and structure, but also in design and price. When it comes to calibration, however, all devices are similar, which makes the process easier. The probe at the end of the pH meter is simply dipped into the buffer solutions. The measurement takes placeat the push of a button. It is important to set to ATC or pH beforehand. Manual pH meter Manual pH meters usually do not have a head that can be used to calibrate the pH electrode. Instead,a screw on the devicemust be loosened, which is located at the end of the pin. As soon as the measured value matches that of the solution, the measurement can be terminated and the screw tightened again. Calibrate pH meter: Buffer solutions Buffer solutions are required to calibrate a pH measuring instrument. These bear their name because they can both keep a pH stable and buffer it. These special solutions are standardized according toDIN 19266, which makes them easily reproducible. Uncertainties are a maximum of 0.005 pH units. When selecting and using buffer solutions, pay attention to the following factors: Order of use:In fact, it does not matter at all in which order the buffer solutions are used in a two-point calibration. The only important thing is that the voltage is determined at least twice. Whether the pH value 7.0 or 4.0 or 7.0 is used first is irrelevant. Composition:The composition is also specified in DIN 19266. According to this standard, a buffer solution consists of either: from a weak acid and a conjugate base OR from a weak base and a conjugate acid. Temperature:In addition, attention must be paid to the temperature of the buffer solution. The linear value is given for 25C, so calibration of pH meters should also be performed at 25C. If temperature differences occur, large errors in the measurement results are sometimes to be expected. Calibration of the pH electrode with different methods How to calibrate the pH value is specified inDIN 19269. Several procedures are also given there, according to which the process can be carried out. In addition to a single-point calibration, the two-point calibration described above and a multi-point calibration are also possible. Single point calibration In a so-called single-point calibration,only one buffer solution is used, and this is used to determine the zero point of the pH electrode. From there, the slope is assumed to be the same as the Nernst slope, which is the theoretical value of the electrode slope. Although this procedure is time-saving, it should only be used when several identical solutions are to be checked. Two-point calibration Two-point calibration is performed with the aid of two buffer solutions that differ in pH value.A linear slope and a zero pointcan be determined between the two measuring points, from which the output value of the pH electrode is calculated. Usually, this method is sufficient to calibrate the pH value and achieve a high measurement accuracy. Multipoint calibration It becomes even more specific with multipoint calibrations, which use several (mostly alkaline) buffer solutions as reference. The distance of the pH value between the individual solutions is 0.5 or more. Adjacent segments are formed within whichthe slope and zero pointcan be determined. This allows particularly accurate measured values to be achieved. Is it important to calibrate the pH meter? Although the terms calibration and verification are often used interchangeably, they arecompletely separate processes. Calibration should be carried out independently on a regular basis to enable permanently accurate measured values. Should inaccurate measurement results actually occur, this is in principle not associated with any legal consequences. This is contrasted with the calibration of the pH meter, which must be performed by a specialist. During calibration, the device is testedin an official inspectionto determine whether it meets the legal requirements. If this is not the case, it must not be used further. How often do you have to calibrate the pH meter? Unlike the buffer solution, there areno standards or legal requirements for the frequency of calibration. It makes sense to calibrate the pH tester regularly: This is the only way to prevent inaccurate measured values from arising and negatively affecting the quality of products or research results. Also, the durability of the gauges can sometimes be greatly shortened if this maintenance step is omitted. The ideal time interval for recalibration depends on several factors. These include, for example,the frequency of use and the need for absolutely accurate readings. It is usually recommended to calibrate the pH meters at least twice a month. But daily cycles may also be appropriate. In addition, the question How often to calibrate the pH meter? can be answered by referring to specific cases, i.e. when one or more of the following circumstances become noticeable: A new electrode is used or installed A few days have passed since the device was last used The existing electrode has just been cleaned A measurement was made in a strong (acidic or basic) solution The following measurement must have a particularly accurate result Calibrate pH meters correctly and regularly Calibrating the pH meter does not only result inhigh measuring accuracy: it also increases the durability, which is monetarily profitable. It is important to pay attention to a suitable procedure and to choose the right time intervals. Then nothing will stand in the way of optimum measured values with all device types. FAQ Download Article Download Article Chemists, biologists, environmentalists, and lab technicians alike all use pH to measure the acidic and basic potentials of a solution. A pH meter is very useful and the most accurate tool available to test pH levels. There are many simple steps, from preparing your materials to methodically calibrating and testing, to ensure you have the most accurate reading of pH levels possible. 1Turn on your pH meter. Before you begin to calibrate and use your pH meter you will first need to turn it on and allow adequate time for the meter to warm up. This should generally take around 30 minutes, but check your pH meter's operating manual for exact times. 2Clean your electrode. Take the electrode out of its storage solution and rinse it with distilled water under an empty waste beaker. Once rinsed, blot dry with Kimwipes or Shurwipes, which are available at most office supply stores.[1]Be sure to rinse your electrode in a waste beaker that is different from the beaker you will be calibrating in.[2]Avoid rubbing the electrode as it has a sensitive membrane around it.If you find the electrode to be particularly dirty consult your operating manual for recommended cleaning solutions. Advertisement 3Prepare your buffers. You will generally need more than one buffer for calibrating a pH meter. The first will be a neutral buffer with a pH of 7, and the second should be near the expected sample pH, either a pH of 4 or 9.21. Buffers with a higher pH (9.21) are best for measuring bases, whereas buffers with a low pH (4) are best for measuring acidic samples. Once you have chosen your buffers allow them to reach the same temperature as the pH meter because pH readings are temperature dependent. Pour your buffers into individual beakers for calibration.[3]Check with your pH meter manufacturer, or current educational or professional institution, about acquiring pH buffer solutions.Buffers should be kept in a beaker for no longer than two hours.Discard the buffer when you are finished. Do not return it to its original container. Advertisement 1Place your electrode in the buffer with a pH value of 7 and begin reading. Press the measure or calibrate button to begin reading the pH once your electrode is placed in the buffer.[4]Allow the pH reading to stabilize before letting it sit for approximately 1-2 minutes.2Set the pH. Once you have a stable reading, set the pH meter to the value of the buffer's pH by pressing the measure button a second time. Setting the pH meter once the reading has stabilized will allow for more accurate and tuned readings.[5]Although not necessary, if you stir your buffer before measuring be sure to stir all other buffers and samples in the same way.3Rinse your electrode with distilled water. Rinse and pat dry with a lint-free tissue, like Kimwipes or Shurwipes, in between buffers.[6]4Place your electrode in the appropriate buffer for your sample and begin reading. Press the measure button to begin reading the pH once your electrode is placed in the buffer.[7]5Set the pH a second time. Once your reading has stabilized, set the pH meter to the value of the buffer's pH by pressing the measure button.[8]6Rinse your electrode. You can use distilled water to rinse. Use a lint-free tissue, like Kimwipes or Shurwipes, in between buffers to dry the electrode.[9] Advertisement 1Place your electrode in your sample and begin reading. Once your electrode is placed in your sample, press the measure button and leave the electrode in your sample for approximately 1-2 minutes.[10]2Set your pH level. Once the reading has stabilized, press the measure button. This is the pH level of your sample.[11]3Clean your electrode after use. Rinse your electrode with distilled water and blot or dab dry with a lint-free tissue. You may store your pH meter once clean and dry.[12]Consult your operation manual for optimal storage practices for your specific pH meter. Advertisement Add New Question Question How do I discuss the pH meter calibration report when writing a standard operation procedure? Bess Ruff, MA Environmental ScientistBess Ruff is a Geography PhD student at Florida State University. She received her MA in Environmental Science and Management from the University of California, Santa Barbara in 2016. She has conducted survey work for marine spatial planning projects in the Caribbean and provided research support as a graduate fellow for the Sustainable Fisheries Group. This article provides a solid outline for how you should write up the calibration steps in any formal lab report. You'll want to be sure to mention which buffer you used and why as well as the temperature of all components involved. Question Is it always necessary to calibrate the pH meter before using? Usually daily calibration is necessary. Question My Jellas pH meter recommends calibrating with deionized water. Is deionized water necessary, or can distilled water be used? Deionized water basically means water without any ionic charges. It requires ion exchangers to perform the process. However, distilled water will work fine. See more answers Ask a Question Advertisement Thanks Thanks Advertisement Advertisement pH meterDistilled waterKimwipe or Shurwipe, a special thin tissue specifically for laboratory usepH 9.21 buffer, a solution whose pH is constantly 9.21pH 7 buffer, a solution whose pH is constantly 7pH 4 buffer, a solution whose pH is constantly 4 This article was co-authored by Bess Ruff, MA. Bess Ruff is a Geography PhD student at Florida State University. She received her MA in Environmental Science and Management from the University of California, Santa Barbara in 2016. She has conducted survey work for marine spatial planning projects in the Caribbean and provided research support as a graduate fellow for the Sustainable Fisheries Group. This article has been viewed 741,327 times. Co-authors: 33 Updated: June 11, 2025 Views:741,327 Categories: Aquariums | Chemistry PrintSend fan mail to authors Thanks to all authors for creating a page that has been read 741,327 times. "This helped me in my task of performing a pH meter calibration in my laboratory, thank you!" Share your story Healthy Canning explores modern, lab-tested home food preservation methods from reputable sources and provides an in-depth knowledge base. We have partnered with the Facebook group Canning for beginners, safely by the book. All recipes are 100% life story free. Things home canners are currently searching in the past 30 days. Canning pumpkin and squash Winter home canning recipes & topics Healthy Canning has an extensive knowledge base for learning about home food preservation. See more learning topics Healthy Canning points people towards information on canning from researchers and reputable experts. We are constantly striving to be better communicators of the science and principles behind safe, quality home food preservation. Learn more about Healthy Canning Sometimes considered the poor cousin of home canning, dry mixes in fact act as a great complement to your home food preservation. Check out some of these ideas!. See more DIY mixes ,the free encyclopedia that anyone can edit.111,866 active editors 7,010,962 articles in English1820 historical world mapHistory is the systematic study of the past with its main focus on the human past. Historians analyse and interpret primary and secondary sources to construct narratives about what happened and explain why it happened. They engage in source criticism to assess the authenticity, content, and reliability of these sources. It is controversial whether the resulting historical narratives can be truly objective and whether history is a social science rather than a discipline of the humanities. Influential schools of thought include positivism, the Annales school, Marxism, and postmodernism. Some branches of history focus on specific time periods, such as ancient history, particular geographic regions, such as the history of Africa, or distinct themes, such as political, social, and economic history. History emerged as a field of inquiry in antiquity to replace myth-infused narratives, with influential early traditions originating in Greece, China, and later in the Islamic world. (Fullarticle...)Recently featured: Ian CarmichaelRusset sparrowEmmy NoetherArchiveBy emailMore featured articlesAboutRosa Parks... that Rosa Parks (pictured) refused to surrender her seat not because she was physically tired, but because she was "tired of giving in"?... that most of the population of Niamey has consisted of first- and second-generation rural migrants since the city was established?... that Harry Wunsch, despite appearing "short and fat", was a "savage tackler"?... that Black dandyism flourished during and after the Harlem Renaissance as a means of self-expression in the African-American community?... that 17th-century mathematician Carlo Rinaldini studied gall-inducing insects, air convection, and the design of thermometers?... that the title of Elegies comes from a suite of poems that its director read during the film's pre-production?... that Saba's airport, known for its short runway, was named after Juancho Yrausquin in honor of his efforts to secure funding?... that Sculpture Space lets artists create large-scale works in a former metalworking shop?... that Olympic historians were unconvinced by speculation that an unknown boy coxswain grew up to be a renowned Georgian mathematician?ArchiveStart a new articleNominate an articlePhil HansonIn motorsport, Robert Kubica, Yifei Ye, and Phil Hanson (pictured) of AF Corse win the 24 Hours of Le Mans.In the US state of Minnesota, state representative Melissa Hortman is assassinated and state senator John Hoffman is injured.Former president of Nicaragua and first elected female president in the Americas Violeta Chamorro dies at the age of 95.Israel launches multiple airstrikes across cities in Iran, killing various nuclear scientists and military officials, including IRGC commander-in-chief Hossein Salami.Ongoing: Gaza warRussian invasion of UkrainetimelineSudanese civil wartimelineRecent deaths: Alfred BrendelAli ShamkhaniHamilton WanasingheAfa Ah LooGeoff PalmerStella ChenNominate an articleJune 19: Juneteenth in the United States (1865)Lou Gehrig baseball card1785 The proprietors of King's Chapel, Boston, voted to adopt James Freeman's Book of Common Prayer, thus establishing the first Unitarian church in the Americas.1838 The Maryland province of the Jesuits contracted to sell 272 slaves to buyers in Louisiana in one of the largest slave sales in American history.1939 American baseball player Lou Gehrig (pictured) was diagnosed with amyotrophic lateral sclerosis, now commonly known in the United States as "Lou Gehrig's disease".2009 War in Afghanistan: British forces began Operation Panther's Claw, in which more than 350 troops made an aerial assault on Taliban positions in southern Afghanistan.tienne Geoffroy Saint-Hilaire (d.1844)Sarah Rosetta Wakeman (d.1864)Aage Bohr (b.1922)Clayton Kirkpatrick (d.2004)More anniversaries: June 18June 19June 20ArchiveBy emailList of days of the yearAboutDred Scott (c.1799 1858) was an enslaved African American who, along with his wife, Harriet Robinson Scott, unsuccessfully sued for the freedom of themselves and their two daughters, Eliza and Lizzie, in the 1857 legal case Dred Scott v. Sandford. The Scotts claimed that they should be granted freedom because Dred had lived for four years in Illinois and the Wisconsin Territory, where slavery was illegal, and laws in those jurisdictions said that slave holders gave up their rights to slaves if they stayed for an extended period. The Supreme Court of the United States ruled against Scott in a landmark decision that held the Constitution did not extend American citizenship to people of black African descent, and therefore they could not enjoy the rights and privileges that the Constitution conferred upon American citizens. The Dred Scott decision is widely considered the worst in the Supreme Court's history, being widely denounced for its overt racism, judicial activism, poor legal reasoning, and crucial role in the events that led to the American Civil War four years later. The ruling was later superseded by the passage of the Thirteenth Amendment to the United States Constitution, which abolished slavery, in 1865, followed by the Fourteenth Amendment, whose first section guaranteed birthright citizenship for "all persons born or naturalized in the United States and subject to the jurisdiction thereof", in 1868. This posthumous oil-on-canvas portrait of Scott was painted by Louis Schultze, after an 1857 photograph by John H. Fitzgibbon, and now hangs in the Missouri History Museum in St.Louis.Painting credit: Louis Schultze, after John H. FitzgibbonRecently featured: Garni TempleIgor StravinskySabella pavoninaArchiveMore featured picturesCommunity portal The central hub for editors, with resources, links, tasks, and announcements.Village pump Forum for discussions about Wikipedia itself, including policies and technical issues.Site news Sources of news about Wikipedia and the broader Wikimedia movement.Teahouse Ask basic questions about using or editing Wikipedia.Help desk Ask questions about using or editing Wikipedia.Reference desk Ask research questions about encyclopedic topics.Content portals A unique way to navigate the encyclopedia.Wikipedia is written by volunteer editors and hosted by the Wikimedia Foundation, a non-profit organization that also hosts a range of other volunteer projects: CommonsFree media repository MediaWikiWiki software development Meta-WikiWikimedia project coordination WikibooksFree textbooks and manuals WikidataFree knowledge base WikinewsFree-content news WikiquoteCollection of quotations WikisourceFree-content library WikispeciesDirectory of species WikiversityFree learning tools WikivoyageFree travel guide WiktionaryDictionary and thesaurusThis Wikipedia is written in English. Many other Wikipedias are available; some of the largest are listed below. 1,000,000+ articles DeutschEspaolFranaisItalianoNederlandsPolskiPortugusSvenskaTing Vit 250,000+ articles Bahasa IndonesiaBahasa MelayuBn-lm-gCataletinaDanskEestiEsperantoEuskaraMagyarNorsk bokmlRomnSimple EnglishSloveninaSrpskiSrpskohrvatskiSuomiTrkeOzbekcha 50,000+ articles AsturianuAzrbaycancaBosanskiFryskGaeilgeGalegoHrvatskiKurdLatvieuLietuviNorsk nynorskShqipSlovenina Retrieved from " 2This article is about the year 1865. For other uses, see 1865 (disambiguation).Calendar yearYearsMillennium2ndmillenniumCenturies18thcentury19thcentury 20thcenturyDecades1840s1850s1860s 1870s1880sYears1862186318641865 186618671868vte1865 by topicHumanitiesAnimationArchaeologyArchitectureArtLiteraturePoetryMusicBy countryAustraliaBelgiumBrazilCanadaChinaDenmarkFranceGermanyNew ZealandNorwayPortugalRussiaSouth AfricaSwedenUnited KingdomUnited StatesOther topicsRail transportScienceSportsLists of leadersSovereign statesSovereign state leadersTerritorial governorsReligious leadersLawBirth and death categoriesBirthsDeathsEstablishments and disestablishments categoriesEstablishmentsDisestablishmentsWorks categoryWorksvte1865 in various calendarsGregorian calendar1865MDCCCLXVAb urbe condita2618Armenian calendar1314 Assyrian calendar6615Bah calendar2122Balinese saka calendar17861787Bengali calendar12711272Berber calendar2815British Regnal year28Vict.129Vict.1Buddhist calendar2409Burmese calendar1227Byzantine calendar73737374Chinese calendar (WoodRat)4562 or 4355to (WoodOx)4563 or 4356Coptic calendar15811582Discordian calendar3031Ethiopian calendar18571858Hebrew calendar56255626Hindu calendars- Vikram Samvat19211922- Shaka Samvat17861787- Kali Yuga49654966Holocene calendar11865Igbo calendar865866Iranian calendar12431244Islamic calendar12811282Japanese calendarGenji 2 / Kei 1()Javanese calendar17931794Julian calendarGregorian minus 12 daysKorean calendar4198Minguo calendar47 before ROC47Nanakshahi calendar397Thai solar calendar24072408Tibetan calendar(male Wood-Rat)1991 or 1610 or 838to(female Wood-Ox)1992 or 1611 or 839Wikimedia Commons has media related to 1865.1865 (MDCCCLXV) was a common year starting on Sunday of the Gregorian calendarand a common year starting on Friday of the Julian calendar, the 1865th year of the Common Era (CE) and Anno Domini (AD) designations, the 865th year of the 2ndmillennium, the 65th year of the 19thcentury, and the 6th year of the 1860s decade. As of the start of 1865, the Gregorian calendar was 12 days ahead of the Julian calendar, which remained in localized use until 1923. Calendar year January 15: Union captures Fort Fisher.January 4 The New York Stock Exchange opens its first permanent headquarters at 10-12 Broad near Wall Street, in New York City.January 13 American Civil War: Second Battle of Fort Fisher Union forces launch a major amphibious assault against the last seaport held by the Confederates, Fort Fisher, North Carolina.January 15 American Civil War: Union forces capture Fort Fisher.January 31The Thirteenth Amendment to the United States Constitution (conditional prohibition of slavery and involuntary servitude) passes narrowly, in the House of Representatives.American Civil War: Confederate General Robert E. Lee becomes general-in-chief.February 3 American Civil War: Hampton Roads Conference: Union and Confederate leaders discuss peace terms.February 6 The municipal administration of Finland is established.[1]February 8 & March 8 Gregor Mendel reads his paper on Experiments on Plant Hybridization at two meetings of the Natural History Society of Brnn in Moravia, subsequently taken to be the origin of the theory of Mendelian inheritance.[2]February 21 John Deere receives a United States patent for ploughs.February 22 Tennessee adopts a new constitution that abolishes slavery.February American Civil War: Columbia, South Carolina burns, as Confederate forces flee from advancing Union forces.March 3 The U.S. Congress authorizes formation of the Bureau of Refugees, Freedmen and Abandoned Lands.March 4 Washington College and Jefferson College are merged to form Washington & Jefferson College in the United States.[3]March 13 American Civil War: The Confederate States of America agrees to the use of African American troops.March 18 American Civil War: The Congress of the Confederate States of America adjourns for the last time.March 1921 American Civil War: Battle of Bentonville: Union troops compel Confederate forces to retreat from Four Oaks, North Carolina.March 25The Claywater Meteorite explodes just before reaching ground level in Vernon County, Wisconsin; fragments having a combined mass of 1.5kg (3.3lb) are recovered.American Civil War: In Virginia, Confederate forces capture Fort Stedman from the Union, although it is retaken the same day. Lee's army suffers heavy casualties: about 2,900, including 1,000 captured in the Union counterattack. Confederate positions are weakened. After the battle, Lee's defeat is only a matter of time.March Hamm's Brewery opens in St. Paul, Minnesota.April 2: Jefferson Davis.April 9: Appomattox Court House.April 14: Lincoln shot.April 1 American Civil War Battle of Five Forks: In Petersburg, Virginia, Confederate General Robert E. Lee begins his final offensive.April 2 American Civil War: Confederate President Jefferson Davis and most of his Cabinet flee the Confederate capital of Richmond, Virginia, which is taken by Union troops the next day.April 6 German chemicals producer Badische Anilin- und Sodafabrik (BASF) is founded in Mannheim.April 9 American Civil War: Confederate States Army General Robert E. Lee surrenders to Union Army General Ulysses S. Grant at Appomattox Court House, effectively ending the war.April 14Assassination of Abraham Lincoln: President of the United States Abraham Lincoln is shot while attending an evening performance of the farce Our American Cousin at Ford's Theatre in Washington, D.C., by actor and Confederate sympathizer John Wilkes Booth.United States Secretary of State William H. Seward and his family are attacked in his home, by Lewis Powell.April 15 President Lincoln dies early this morning from his gunshot wound, aged 56. Vice President Andrew Johnson becomes the 17th President of the United States upon Lincoln's death and is sworn in later that morning.April 18 Confederate President Jefferson Davis and his entire cabinet arrive in Charlotte, North Carolina, with a contingent of 1,000 soldiers.April 21 German chemicals producer BASF moves its headquarters and factories from Mannheim, to the Hemshof District of Ludwigshafen.April 26American Civil War: Confederate General Joseph E. Johnston surrenders to Union Major General William Tecumseh Sherman, at Durham Station, North Carolina.Union cavalry corner John Wilkes Booth in a Virginia barn, and cavalryman Boston Corbett fatally shoots the assassin.April 27The steamboat Sultana, carrying 2,300 passengers, explodes and sinks in the Mississippi River, killing 1,800, mostly Union survivors of the Andersonville Prison.April 27: Steamboat Sultana sinks.Governor of New York Reuben Fenton signs a bill formally creating Cornell University.May 1 The Treaty of the Triple Alliance of Argentina, Brazil, and Uruguay against Paraguay is formally signed, following the outbreak of the Paraguayan War.May 4 American Civil War: Lieutenant General Richard Taylor, commanding all Confederate forces in Alabama, Mississippi, and eastern Louisiana, surrenders his forces to Union General Edward Canby at Citronelle, Alabama, effectively ending all Confederate resistance east of the Mississippi River.May 5 In the United States:In North Bend, Ohio (a suburb of Cincinnati), the first train robbery in the country takes place.Jefferson Davis meets with his Confederate Cabinet (14 officials) for the last time, in Washington, Georgia, and the Confederate Government is officially dissolved.May 10 American Civil War: Jefferson Davis is captured by the Union Army near Irwinville, Georgia.May 12 Electric equipment and mobile brand Nokia founded in Tampere, Finland.May 1213 American Civil War Battle of Palmito Ranch: In far south Texas, more than a month after Confederate General Lee's surrender, the last land battle of the civil war with casualties, ends with a Confederate victory.May 17The International Telegraph Union is founded.French missionary Father Armand David first observes Pre David's deer in Peking, China.[4]May 23 Grand Review of the Armies: Union Army troops parade down Pennsylvania Avenue (Washington, D.C.) to celebrate the end of the American Civil War.May 25 Mobile magazine explosion: 300 are killed in Mobile, Alabama, when an ordnance depot explodes.May 28 The Mimosa sets sail with emigrants from Wales for Patagonia.[5]May 29 American Civil War: President of the United States Andrew Johnson issues a proclamation of general amnesty for most citizens of the former Confederacy.June 2 American Civil War: Confederate forces west of the Mississippi River under General Edmund Kirby Smith surrender at Galveston, Texas, under terms negotiated on May 26, becoming the last to do so.June 10 Richard Wagner's opera Tristan und Isolde debuts at the Munich Court Theatre.June 11 Battle of the Riachuelo: The Brazilian Navy squadron defeats the Paraguayan Navy.July 2: Salvation ArmyJune 19 American Civil War: Union Major General Gordon Granger lands at Galveston, Texas, and informs the people of Texas of the Emancipation Proclamation (an event celebrated in modern times each year as Juneteenth).June 23 American Civil War: At Fort Towson in Oklahoma Territory, Confederate General Stand Watie, a Cherokee Indian, surrenders the last significant Rebel army.June 25 James Hudson Taylor founds the China Inland Mission at Brighton, England.June 26 Jumbo, a young male African elephant, arrives at London Zoo and becomes a popular attraction.JuneAugust English polymath Francis Galton first describes eugenics.[6]July 4 Lewis Carroll publishes his children's novel Alice's Adventures in Wonderland in England[7][8] (first trade editions in December).July 5The U.S. Secret Service is founded.The first speed limit is introduced in Britain: 2mph (3.2km/h) in town and 4mph (6.4km/h) in the country.July 7 Following Abraham Lincoln's assassination on April 14, the four conspirators condemned to death during the trial are hanged, including David Herold, George Atzerodt, Lewis Powell and Mary Surratt. Her son, John Surratt, escapes execution by fleeing to Canada, and ultimately to Egypt.July 14 First ascent of the Matterhorn: The summit of the Matterhorn in the Alps is reached for the first time, by a party of 7 led by the Englishman Edward Whymper; 4 die in a fall during the descent. July 14: Matterhorn climbed. July 30: Steamer Brother Jonathan sinks.July 21 Wild Bill Hickok Davis Tutt shootout: In the market square of Springfield, Missouri, Wild Bill Hickok shoots "Little Dave" Davis Tutt dead over a poker debt, in what is regarded as the first true western fast draw showdown.July 23 The SSGreat Eastern departs on a voyage to lay a transatlantic telegraph cable.[7]July 26 The New Zealand Parliament first meets in Wellington on a permanent basis, making it de facto the national capital.[9]July 27Welsh settlers arrive in Argentina at Chubut Valley.Businessman Asa Packer establishes Lehigh University in Bethlehem, Pennsylvania.July 30 The steamer Brother Jonathan sinks off the California coast, killing 225 passengers and crew.July 31 The first narrow gauge mainline railway in the world opens at Grandchester, Australia.July The Christian Mission, later renamed The Salvation Army, is founded in Whitechapel, London, by William and Catherine Booth.August 16 The Dominican Republic regains independence from Spain.August 25 The Shergotty meteorite Mars meteorite falls in Sherghati, Gaya, Bihar in India.September 19 Union Business College (now Peirce College) is founded in Philadelphia.September 26 Champ Ferguson becomes the first person (and one of only two) to be convicted of war crimes for actions taken during the American Civil War, found guilty by a U.S. Army tribunal on 23 charges, arising from the murder of 53 people. He is hanged on October 20, two days after the conviction of Henry Wirz for war crimes.[10]October 11 Morant Bay rebellion: Paul Bogle leads hundreds of black men and women in a march in Jamaica; the rebellion is brutally suppressed by the British governor Edward John Eyre with 400 executed.[8]October 25 Florida drafts its constitution in Tallahassee.October 26The Standard Oil Company opens.The paddlewheel steamer SSRepublic sinks off the Georgia coast, with a cargo of $400,000 in coins.November 6 American Civil War: The CSS Shenandoah, last remnant of the Confederate States of America and its military, surrenders in Liverpool after fleeing westward from the Pacific.November 10 Captain Henry Wirz, Confederate superintendent of Andersonville Prison (Camp Sumter) is hanged, becoming the second of two combatants, and only serving regular soldier, to be executed for war crimes committed during the American Civil War.November 11 Duar War between Britain and Bhutan ends with the Treaty of Sinchula, in which Bhutan cedes control of its southern passes to Britain in return for an annual subsidy.[7]November 17 Chincha Islands War: Action of 17 November 1865 A Spanish gunboat is captured by the Chilean tugboat Independencia off Tom, in the Bay of Concepcin, Chile.November 26 Chincha Islands War: Battle of Papudo The Spanish ship Covadonga is captured by the Chileans and the Peruvians, north of Valparaso, Chile.December 11 The United States Congress creates the United States House Committee on Appropriations and the Committee on Banking and Commerce, reducing the tasks of the House Committee on Ways and Means.December 17 Leopold II becomes King of the Belgians, following the death (on December 10) of his father, King Leopold I.December 18 Secretary of State William H. Seward declares the Thirteenth Amendment to the United States Constitution ratified by three-quarters of the states, including those in secession. As of December 6, slavery is legally outlawed in the last two slave states of Kentucky and Delaware, and the remaining 45,000 slaves are freed.December 21 The Kappa Alpha Order is founded at Washington College, Lexington, Virginia.December 24 Jonathan Shank and Barry Ownby form the Ku Klux Klan in the American South, to resist Reconstruction and intimidate carpetbaggers and scalawags, as well as to repress the freedpeople.Francis Galton.A forest fire near Silverton, Oregon, destroys about one million acres (4,000 km2) of timber.The National Temperance Society and Publishing House is founded by James Black in the U.S.Nottingham Forest Football Club, an association football based in West Bridgford, Nottingham, England, is founded.January 5 Julio Garavito Armero, Colombian astronomer (d. 1920)January 9 Leo Ditrichstein, Austrian-born stage actor, playwright (d. 1928)January 19 Valentin Serov, Russian portrait painter (d. 1911)January 20 Yvette Guilbert, French cabaret singer, actress (d. 1944)January 27 Nikolai Pokrovsky, Russian politician, last foreign minister of the Russian Empire (d. 1930)January 28Lala Lajpat Rai ("The Lion of Punjab"), a leader of the Indian independence movement (d. 1928)Kaarlo Juho Sthlberg, 1st President of Finland (d. 1952)[11]January 31 Henri Desgrange, French cycling enthusiast, founder of the Tour de France (d. 1940)February 4 Ernest Hanbury Hankin, English bacteriologist, naturalist (d. 1939)February 9 Beatrice Stella Tanner, later Mrs. Patrick Campbell, English theatre actress, producer (d. 1940)February 12Enrico Millo, Italian admiral and politician (d. 1930)[12]Kazimierz Tetmajer, Polish writer (d. 1940)February 17 Ernst Troeltsch, German theologian (d. 1923).February 19 Sven Hedin, Swedish scientist, explorer (d. 1952)February 21 John Haden Badley, English author, educator (d. 1967)February 28 Wilfred Grenfell, English medical missionary to Newfoundland and Labrador (d. 1940)Elma DanielssonMarch 1 Elma Danielsson, Swedish socialist, journalist (d. 1936)March 10 Tan Sitong, Chinese reformist leader (d. 1898)March 15 Sui Sin Far, English-born writer (d. 1914)March 19 William Morton Wheeler, American entomologist (d. 1937)March 30 Heinrich Rubens, German physicist (d. 1922)April Richard Rushall, British sea captain and businessman (d. 1953)April 1 Richard Adolf Zsigmondy, Austrian-born chemist, Nobel Prize laureate (d. 1929)April 2 Gyorche Petrov, Macedonian and Bulgarian revolutionary (d. 1921)April 6 Victory Bateman, American stage and screen actress (d. 1926)April 9Violet Nicolson, English poet (d. 1904)Erich Ludendorff, German general (d. 1937)Charles Proteus Steinmetz, German-American engineer, electrician (d. 1923)April 14 Alfred Hoare Powell, English Arts and Crafts architect, and designer and painter of pottery (d. 1960)April 16 Harry Chauvel, Australian Army general (d. 1945)[13]April 18 Lenidas Plaza, 16th President of Ecuador (d. 1932)April 26 Akseli Gallen-Kallela, Finnish artist (d. 1931)[14]April 28Vital Brazil, Brazilian physician, immunologist (d. 1950)Charles W. Woodworth, American entomologist (d. 1940)Pieter ZeemanKing George V of the United KingdomMay 2 Clyde Fitch, American dramatist (d. 1909)May 3 Martha M. Simpson, Australian educationalist ((d. 1948)May 23 Epitcio Pessoa, 11th President of Brazil (d. 1942)May 25John Mott, American YMCA leader, recipient of the Nobel Peace Prize (d. 1955)Pieter Zeeman, Dutch physicist, Nobel Prize laureate (d. 1943)May 26 Robert W. Chambers, American artist (d. 1933)June 2 George Lohmann, English cricketer (d. 1901)June 3 George V of the United Kingdom (d. 1936)June 9Albric Magnard, French composer (d. 1914)Carl Nielsen, Danish composer (d. 1931)June 13 W. B. Yeats, Irish writer, Nobel Prize laureate (d. 1939)June 19Alfred Hugenberg, German businessman, politician (d. 1951)May Whitty, British stage and screen actress (d. 1948)June 21 Otto Frank, German physiologist (d. 1944)June 26 Bernard Berenson, American art historian (d. 1959)June 29 Shigechiyo Izumi, Japanese supercentenarian (d. 1986)Philipp ScheidemannJulia MarloweJuly 1 Granville Ryrie, Australian Army general, politician, and diplomat (d. 1937)[15]July 13 Grard Encausse, French occultist (d. 1916)July 15 Alfred Harmsworth, 1st Viscount Northcliffe, Irish-born British publisher; founder of the Daily Mail and Daily Mirror (d.1922)July 23Max Heindel, Danish-born Christian occultist, astrologer, and mystic (d. 1919)Edward Terry Sanford, Associate Justice of the Supreme Court of the United States (d. 1930)July 26 Philipp Scheidemann, 11th Chancellor of Germany (d. 1939)August 2Irving Babbitt, American literary critic (d. 1933)John Radecki, Australian stained glass artist (d. 1955)August 10 Alexander Glazunov, Russian composer (d. 1936)August 15 Usui Mikao, Japanese founder of reiki (d. 1926)August 17 Julia Marlowe, English-born American stage actress (d. 1950)August 20 Bernard Tancred, South African cricketer (d. 1911)August 22 Templar Saxe, British actor and singer (d. 1935)August 24 King Ferdinand I of Romania (d. 1927)August 27 James Henry Breasted, American Egyptologist (d. 1935)September 4 Maria Karowska, Polish Roman Catholic religious professed and blessed (d. 1935)September 11 Rainis, Latvian poet, playwright (d. 1929)September 13 William Birdwood, 1st Baron Birdwood, British field marshal (d. 1951)September 26 Mary Russell, Duchess of Bedford, English aviator, ornithologist (d. 1937)Charles W. ClarkHovhannes AbelianWarren G. HardingJean SibeliusRudyard KiplingOctober 1 Paul Dukas, French composer (d. 1935)October 9 Arthur Hayes-Sadler, British admiral (d. 1952)October 10 Rafael Merry del Val, Spanish Roman Catholic Cardinal and Secretary of the Congregation of the Holy Office (d. 1930)October 12 Arthur Harden, English chemist, Nobel Prize laureate (d. 1940)October 15 Charles W. Clark, American baritone (d. 1925)October 16 Rudolph Lambart, 10th Earl of Cavan, British field marshal (d. 1946)October 17 James Rudolph Garfield, U.S. politician (d. 1950)October 22Charles James Briggs, British general (d. 1941)Raymond Hitchcock, American actor (d. 1929)October 23 Hovhannes Abelian, Armenian actor (d. 1936)October 26 Benjamin Guggenheim, American businessman (d. 1912)October 27 Tinsley Lindley, English footballer (d. 1940)November 2 Warren G. Harding, 29th President of the United States (d. 1923)November 11 Edwin Thanhouser, American actor, businessman, and film producer, founder of the Thanhouser Company (d. 1956)December 8Rdiger von der Goltz, German general (d. 1946)Jean Sibelius, Finnish composer (d. 1957)December 12 Edwyn Alexander-Sinclair, British admiral (d. 1945)December 16 Olavo Bilac, Brazilian poet (d. 1918)December 19 Minnie Maddern Fiske, American stage actress (d. 1932)December 20 Elsie de Wolfe, American socialite, interior decorator (d. 1950)December 23Anna Farquhar Bergengren, American author and editor (unknown year of death)James M. Canty, American educator, school administrator, and businessperson (d. 1964)[16]Albrecht, Duke of Wrttemberg, German field marshal (d. 1939)December 25Evangeline Booth, 4th General of The Salvation Army (d. 1950)Fay Templeton, American musical comedy star (d. 1939)December 28 Flix Vallotton, Swiss painter, printmaker (d. 1925)December 30 Rudyard Kipling, Indian-born English writer, Nobel Prize laureate (d. 1936)Ernest Hogan, African-American dancer, musician, and comedian (d. 1909)Habibullah Qurayshi, Bengali Islamic scholar and educationist (d. 1943)[17]Abraham LincolnJohn Wilkes BoothJanuary 14 Marie-Anne Libert, Belgian botanist (b. 1782)January 19 Pierre-Joseph Proudhon, French philosopher, anarchist (b. 1809)January 28 Felice Romani, Italian poet, librettist (b. 1788)February 6 Isabella Beeton, British cook, household management expert (b. 1836)[18]March 1 Anna Pavlovna of Russia, queen consort of the Netherlands (b. 1795)March 20 Yamanami Keisuke, Japanese samurai (b. 1833)March 30 Alexander Dukhnovich, Russian priest, writer and social activist (b. 1803April 1John Milton, Governor of Florida (b. 1807)Giuditta Pasta, Italian soprano (b. 1798)April 2 A. P. Hill, American Confederate general (b. 1825)April 13 Achille Valenciennes, French zoologist (b. 1794)April 15 Abraham Lincoln, 16th President of the United States (b. 1809)April 18 Lon Jean Marie Dufour, French medical doctor, naturalist (b. 1780)April 24 Nicholas Alexandrovich, Tsarevich of Russia (b. 1843)April 26 John Wilkes Booth, American actor, assassin of Abraham Lincoln (b. 1838)April 28 Sir Samuel Cunard, Canadian businessman, founder of the Cunard Line (b. 1787)May 5 Ben Hall, Australian bushranger (b. 1837)May 10 William Armstrong, American lawyer, civil servant, politician, and businessperson (b. 1782)[19] Paul BogleHenry John TempleLeopold I of Belgium July Dimitris Plapoutas, Greek military leader (b. 1786)July 6 Princess Sophie of Sweden, Grand Duchess of Baden (b. 1801)July 7 The Lincoln assassination conspirators (executed)Lewis Powell (b. 1844)David Herold (b. 1842)George Atzerodt (b. 1835)Mary Surratt (b. 1823)July 25 James Barry, British military surgeon (b. 1795)August 4 Percival Drayton, United States Navy officer (b. 1812)August 12 William Jackson Hooker, English botanist (b. 1785)August 13 Ignaz Semmelweis, Hungarian physician (b. 1818)August 16 Sir Frederick Stovin, British army general (b. 1783)August 27 Thomas Chandler Haliburton, Canadian author (b. 1796)August 29 Robert Remak, German embryologist, physiologist and neurologist (b. 1815)September 2 William Rowan Hamilton, Irish mathematician (b. 1805)September 10 Maria Silfvan, Finnish actor (b. 1802)September 25 Andrs de Santa Cruz, Peruvian military officer, seventh President of Peru and President of Bolivia (b. 1792)October 16 Andrs Bello, Venezuelan poet, lawmaker, teacher, philosopher and sociologist (b. 1781)October 18 Henry John Temple, 3rd Viscount Palmerston, Prime Minister of the United Kingdom (b. 1784)October 24 Paul Bogle, Jamaican activist, Baptist deacon and leader of the Morant Bay rebellion. (executed) (b. 1820)November 10 Henry Wirz, Swiss-born American Confederate military officer, prisoner-of-war camp commander (executed) (b. 1823)November 12 Elizabeth Gaskell, British novelist, biographer (b. 1810)November 28Jos Manuel Pareja, Spanish admiral (suicide) (b. 1813)William Machin Stairs, Canadian businessman, statesman (b. 1789)November 29 Isaac A. Van Amburgh, American animal trainer (b. 1811)December 6 Sebastin Iradier, Spanish composer (b. 1809)December 10 King Leopold I of Belgium (b. 1790)December 14 Johan Georg Forchhammer, Danish geologist (b. 1794)December 17 Luigi Ciacchi, Italian cardinal (b. 1788)^ "Kunnallinen itsehallinto 150 vuotta" [150 years of local self-government]. Nopolanews (in Finnish). February 6, 2015. Archived from the original on February 24, 2015. Retrieved February 6, 2024.^ Moore, Randy (May 2001). "The "Rediscovery" of Mendel's Work" (PDF). Bioscene. 27. Archived from the original (PDF) on February 2, 2017. 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OCLC55983178.Retrieved from " 3One hundred years, from 1701 to 1800For other uses, see 18th century (disambiguation).Millennia2ndmillenniumCenturies17thcentury18thcentury19thcenturyTimelines17thcentury18thcentury19thcenturyState leaders17thcentury18thcentury19thcenturyDecades1700s1710s1720s1730s1740s1750s1760s1770s1780s1790sCategories:Births Deaths Establishments DisestablishmentsvtePolitical boundaries at the beginning of year 1700Storming of the Bastille, 14 July 1789, an iconic event of the French Revolution.Development of the Watt steam engine in the late 18th century was an important element in the Industrial Revolution in Europe.The American Revolutionary War took place in the late 18th century. The 18th century lasted from 1 January 1701 (represented by the Roman numerals MDCCI) to 31 December 1800 (MDCCC). During the 18th century, elements of Enlightenment thinking culminated in the Atlantic Revolutions. Revolutions began to challenge the legitimacy of monarchical and aristocratic power structures. The Industrial Revolution began mid-century, leading to radical changes in human society and the environment. The European colonization of the Americas and other parts of the world intensified and associated mass migrations of people grew in size as part of the Age of Sail. During the century, slave trading expanded across the shores of the Atlantic Ocean, while declining in Russia[1] and China.[2]Western historians have occasionally defined the 18th century otherwise for the purposes of their work. For example, the "short" 18th century may be defined as 17151789, denoting the period of time between the death of Louis XIV of France and the start of the French Revolution, with an emphasis on directly interconnected events.[3][4] To historians who expand the century to include larger historical movements, the "long" 18th century[5] may run from the Glorious Revolution of 1688 to the Battle of Waterloo in 1815[6] or even later.[7] France was the sole world superpower from 1659, after it defeated Spain, until 1815, when it was defeated by Britain and its coalitions following the Napoleonic Wars.In Europe, philosophers ushered in the Age of Enlightenment. This period coincided with the French Revolution of 1789, and was later compromised by the excesses of the Reign of Terror. At first, many monarchies of Europe embraced Enlightenment ideals, but in the wake of the French Revolution they feared loss of power and formed broad coalitions to oppose the French Republic in the French Revolutionary Wars. Various conflicts throughout the century, including the War of the Spanish Succession and the Seven Years' War, saw Great Britain triumph over its rivals to become the preeminent power in Europe. However, Britain's attempts to exert its authority over the Thirteen Colonies became a catalyst for the American Revolution. The 18th century also marked the end of the PolishLithuanian Commonwealth as an independent state. Its semi-democratic government system was not robust enough to prevent partition by the neighboring states of Austria, Prussia, and Russia.In West Asia, Nader Shah led Persia in successful military campaigns. The Ottoman Empire experienced a period of peace, taking no part in European wars from 1740 to 1768. As a result, the empire was not exposed to Europe's military improvements during the Seven Years' War. The Ottoman military consequently lagged behind and suffered several defeats against Russia in the second half of the century.In South Asia, the death of Mughal emperor Aurangzeb was followed by the expansion of the Maratha Confederacy and an increasing level of European influence and control in the region. In 1739, Persian emperor Nader Shah invaded and plundered Delhi, the capital of the Mughal Empire. Later, his general Ahmad Shah Durrani scored another victory against the Marathas, the then dominant power in India, in the Third Battle of Panipat in 1761.[8] By the middle of the century, the British East India Company began to conquer eastern India,[9][8] and by the end of the century, the Anglo-Mysore Wars against Tipu Sultan and his father Hyder Ali, led to Company rule over the south.[10][11]In East Asia, the century was marked by theHigh Qing era, a period characterized by significant cultural and territorial expansion. This period also experienced relative peace and prosperity, allowing for societal growth, increasing literacy rates, flourishing trade, and consolidating imperial power across the vast Qing dynasty's territories. Conversely, the continual seclusion policy of the Tokugawa shogunate also brought a peaceful era called Pax Tokugawa and experienced a flourishment of the arts as well as scientific knowledge and advancements, which were introduced to Japan through the Dutch port of Nagasaki. In Southeast Asia, the KonbaungAyutthaya Wars and the Ty Sn Wars broke out while the Dutch East India Company established increasing levels of control over the Mataram Sultanate.In Africa, the Ethiopian Empire underwent the Zemene Mesafint, a period when the country was ruled by a class of regional noblemen and the emperor was merely a figurehead. The Atlantic slave trade also saw the continued involvement of states such as the Oyo Empire. In Oceania, the European colonization of Australia and New Zealand began during the late half of the century. In the Americas, the United States declared its independence from Great Britain. In 1776, Thomas Jefferson wrote the Declaration of Independence. In 1789, George Washington was inaugurated as the first president. Benjamin Franklin traveled to Europe where he was hailed as an inventor. Examples of his inventions include the lightning rod and bifocal glasses. Tpac Amaru II led an uprising that sought to end Spanish colonial rule in Peru.For a chronological guide, see Timeline of the 18th century.See also: Georgian eraMain articles: 1700s, 1710s, 1720s, 1730s, and 1740sEurope at the beginning of the War of the Spanish Succession, 1700The Battle of Poltava in 1709 turned the Russian Empire into a European power.John Churchill, 1st Duke of Marlborough17001721: Great Northern War between the Russian and Swedish Empires.1701: Kingdom of Prussia declared under King Frederick I.1701: The Battle of Feyiase marks the rise of the Ashanti Empire.17011714: The War of the Spanish Succession is fought, involving most of continental Europe.[12]17021715: Camisard rebellion in France.1703: Saint Petersburg is founded by Peter the Great; it is the Russian capital until 1918.17031711: The Rkczi uprising against the Habsburg monarchy.1704: End of Japan's Genroku period.1704: First Javanese War of Succession.[13]17061713: The War of the Spanish Succession: French troops defeated at the Battle of Ramillies and the Siege of Turin.1707: Death of Mughal Emperor Aurangzeb leads to the fragmentation of the Mughal Empire.1707: The Act of Union is passed, merging the Scottish and English Parliaments, thus establishing the Kingdom of Great Britain.[14]1708: The Company of Merchants of London Trading into the East Indies and English Company Trading to the East Indies merge to form the United Company of Merchants of England Trading to the East Indies.17081709: Famine kills one-third of East Prussia's population.1709: Foundation of the Hotak Empire.1709: The Great Frost of 1709 marks the coldest winter in 500 years, contributing to the defeat of Sweden at Poltava.1710: The world's first copyright legislation, Britain's Statute of Anne, takes effect.17101711: Ottoman Empire fights Russia in the Russo-Turkish War and regains Azov.1711: Bukhara Khanate dissolves as local begs seize power.17111715: Tuscarora War between British, Dutch, and German settlers and the Tuscarora people of North Carolina.1713: The Kangxi Emperor acknowledges the full recovery of the Chinese economy since its apex during the Ming.1714: In Amsterdam, Daniel Gabriel Fahrenheit invents the mercury-in-glass thermometer, which remains the most reliable and accurate thermometer until the electronic era.1715: The first Jacobite rising breaks out; the British halt the Jacobite advance at the Battle of Sheriffmuir; Battle of Preston.1716: Establishment of the Sikh Confederacy along the present-day India-Pakistan border.17161718: Austro-Venetian-Turkish War.1718: The city of New Orleans is founded by the French in North America.17181720: War of the Quadruple Alliance with Spain versus France, Britain, Austria, and the Netherlands.17181730: Tulip period of the Ottoman Empire.1719: Second Javanese War of Succession.[15]1720: The South Sea Bubble.17201721: The Great Plague of Marseille.1720: Qing forces oust Dzungar invaders from Tibet.1721: The Treaty of Nystad is signed, ending the Great Northern War.1721: Sack of Shamakhi, massacre of its Shia population by Sunni Lezgins.1722: Siege of Isfahan results in the handover of Iran to the Hotaki Afghans.17221723: Russo-Persian War.17221725: Controversy over William Wood's halfpence leads to the Drapier's Letters and begins the Irish economic independence from England movement.Mughal emperor Muhammad Shah with the Persian invader Nader Shah.1723: Slavery is abolished in Russia; Peter the Great converts household slaves into house serfs.[16]17231730: The "Great Disaster", an invasion of Kazakh territories by the Dzungars.17231732: The Qing and the Dzungars fight a series of wars across Qinghai, Dzungaria, and Outer Mongolia, with inconclusive results.1724: Daniel Gabriel Fahrenheit proposes the Fahrenheit temperature scale.1725: Austro-Spanish alliance revived. Russia joins in 1726.17271729: Anglo-Spanish War ends inconclusively.1730: Mahmud I takes over Ottoman Empire after the Patrona Halil revolt, ending the Tulip period.17301760: The First Great Awakening takes place in Great Britain and North America.17321734: Crimean Tatar raids into Russia.[17]17331738: War of the Polish Succession.Qianlong Emperor17351739: Austro-Russo-Turkish War.17351799: The Qianlong Emperor of China oversees a huge expansion in territory.17381756: Famine across the Sahel; half the population of Timbuktu dies.[18]17371738: Hotak Empire ends after the siege of Kandahar by Nader Shah.1739: Great Britain and Spain fight the War of Jenkins' Ear in the Caribbean.1739: Nader Shah defeats a pan-Indian army of 300,000 at the Battle of Karnal. Taxation is stopped in Iran for three years.17391740: Nader Shah's Sindh expedition.1740: George Whitefield brings the First Great Awakening to New England17401741: Famine in Ireland kills 20 percent of the population.17411743: Iran invades Uzbekistan, Khwarazm, Dagestan, and Oman.17411751: Maratha invasions of Bengal.17401748: War of the Austrian Succession.1742: Marvel's Mill, the first water-powered cotton mill, begins operation in England.[19]1742: Anders Celsius proposes an inverted form of the centigrade temperature, which is later renamed Celsius in his honor.1742: Premiere of George Frideric Handel's Messiah.17431746: Another Ottoman-Persian War involves 375,000 men but ultimately ends in a stalemate.The extinction of the Scottish clan system came with the defeat of the clansmen at the Battle of Culloden in 1746.[20]1744: The First Saudi State is founded by Mohammed Ibn Saud.[21]1744: Battle of Toulon is fought off the coast of France.17441748: The First Carnatic War is fought between the British, the French, the Marathas, and Mysore in India.1745: Second Jacobite rising is begun by Charles Edward Stuart in Scotland.1747: The Durrani Empire is founded by Ahmad Shah Durrani.1748: The Treaty of Aix-La-Chapelle ends the War of the Austrian Succession and First Carnatic War.17481754: The Second Carnatic War is fought between the British, the French, the Marathas, and Mysore in India.1750: Peak of the Little Ice Age.Main articles: 1750s, 1760s, 1770s, 1780s, 1790s, and 1800s1752: The British Empire adopts the Gregorian Calendar, skipping 11 days from 3 September to 13 September. On the calendar, 2 September is followed directly by 14 September.1754: The Treaty of Pondicherry ends the Second Carnatic War and recognizes Muhammed Ali Khan Wallajah as Nawab of the Carnatic.1754: King's College is founded by a royal charter of George II of Great Britain.[22]17541763: The French and Indian War, the North American chapter of the Seven Years' War, is fought in colonial North America, mostly by the French and their allies against the English and their allies.1755: The great Lisbon earthquake destroys most of Portugal's capital and kills up to 100,000.1755: The Dzungar genocide depopulates much of northern Xinjiang, allowing for Han, Uyghur, Khalkha Mongol, and Manchu colonization.17551763: The Great Upheaval forces transfer of the French Acadian population from Nova Scotia and New Brunswick.17561763: The Seven Years' War is fought among European powers in various theaters around the world.17561763: The Third Carnatic War is fought between the British, the French, and Mysore in India.1757: British conquest of Bengal.Catherine the Great, Empress of Russia.1760: George III becomes King of Britain.1761: Maratha Empire defeated at Battle of Panipat.17621796: Reign of Catherine the Great of Russia.1763: The Treaty of Paris ends the Seven Years' War and Third Carnatic War.1764: Dahomey and the Oyo Empire defeat the Ashanti army at the Battle of Atakpam.1764: The Mughals are defeated at the Battle of Buxar.1765: The Stamp Act is introduced into the American colonies by the British Parliament.17651767: The Burmese invade Thailand and utterly destroy Attuthaya.17651769: Burma under Hsinbyushin repels four invasions from Qing China, securing hegemony over the Shan states.1766: Christian VII becomes king of Denmark. He was king of Denmark to 1808.17661799: Anglo-Mysore Wars.1767: Taksin expels Burmese invaders and reunites Thailand under an authoritarian regime.17681772: War of the Bar Confederation.17681774: Russo-Turkish War.1769: Spanish missionaries establish the first of 21 missions in California.17691770: James Cook explores and maps New Zealand and Australia.17691773: The Bengal famine of 1770 kills one-third of the Bengal population.1769: The French East India Company dissolves, only to be revived in 1785.1769: French expeditions capture clove plants in Ambon, ending the Dutch East India Company's (VOC) monopoly of the plant.[23]17701771: Famine in Czech lands kills hundreds of thousands.1771: The Plague Riot in Moscow.1771: The Kalmyk Khanate dissolves as the territory becomes colonized by Russians. More than a hundred thousand Kalmyks migrate back to Qing Dzungaria.1772: Gustav III of Sweden stages a coup d'tat, becoming almost an absolute monarch.Encyclopdie, ou dictionnaire raisonn des sciences, des arts et des mtiers17721779: Maratha Empire fights Britain and Raghunathrao's forces during the First Anglo-Maratha War.17721795: The Partitions of Poland end the PolishLithuanian Commonwealth and erase Poland from the map for 123 years.17731775: Pugachev's Rebellion, the largest peasant revolt in Russian history.1773: East India Company starts operations in Bengal to smuggle opium into China.1775: Russia imposes a reduction in autonomy on the Zaporizhian Cossacks of Ukraine.17751782: First Anglo-Maratha War.17751783: American Revolutionary War.1776: Several kongsi republics are founded by Chinese settlers in the island of Borneo. They are some of the first democracies in Asia.17761777: A Spanish-Portuguese War occurs over land in the South American frontiers.1776: Illuminati founded by Adam Weishaupt.1776: The United States Declaration of Independence is adopted by the Second Continental Congress in Philadelphia.1776: Adam Smith publishes The Wealth of Nations.1778: James Cook becomes the first European to land on the Hawaiian Islands.1778: Franco-American alliance signed.1778: Spain acquires its first permanent holding in Africa from the Portuguese, which is administered by the newly-established La Plata Viceroyalty.1778: Vietnam is reunified for the first time in 200 years by the Tay Son brothers. The Ty Sn dynasty has been established, terminating the L dynasty.17791879: Xhosa Wars between British and Boer settlers and the Xhosas in the South African Republic.17791783: Britain loses several islands and colonial outposts all over the world to the combined Franco-Spanish navy.1779: Iran enters yet another period of conflict and civil war after the prosperous reign of Karim Khan Zand.1780: Outbreak of the indigenous rebellion against Spanish colonization led by Tpac Amaru II in

Peru.1781: The city of Los Angeles is founded by Spanish settlers.George Washington17811785: Serfdom is abolished in the Austrian monarchy (first step; second step in 1848).1782: The Thonburi Kingdom of Thailand is dissolved after a palace coup.1783: The Treaty of Paris formally ends the American Revolutionary War.1783: Russian annexation of Crimea.17851791: Imam Sheikh Mansur, a Chechen warrior and Muslim mystic, leads a coalition of Muslim Caucasian tribes from throughout the Caucasus in a holy war against Russian settlers and military bases in the Caucasus, as well as against local traditionalists, who followed the traditional customs and common law (Adat) rather than the theocratic Sharia.[24]17851795: The Northwest Indian War is fought between the United States and Native Americans.17851787: The MarathaMysore Wars concludes with an exchange of territories in the Deccan.17861787: Wolfgang Amadeus Mozart premieres The Marriage of Figaro and Don Giovanni.1787: The Tuareg occupy Timbuktu until the 19th century.17871792: Russo-Turkish War.1788: First Fleet arrives in Australia17881790: Russo-Swedish War (17881790).1788: Dutch Geert Adriaans Boomgaard (17881899) would become the first generally accepted validated case of a supercentenarian on record.[25][26]Declaration of the Rights of Man and of the Citizen17881789: A Qing attempt to reinstall an exiled Vietnamese king in northern Vietnam ends in disaster.1789: George Washington is elected the first President of the United States; he serves until 1797.1789: Quang Trung defeats the Qing army.17891799: French Revolution.1789: The Lige Revolution.1789: The Brabant Revolution.1789: The Inconfidncia Mineira, an unsuccessful separatist movement in central Brazil led by Tiradentes1791: Suppression of the Lige Revolution by Austrian forces and re-establishment of the Prince-Bishopric of Lige.17911795: George Vancouver explores the world during the Vancouver Expedition.17911804: The Haitian Revolution.1791: Mozart premieres The Magic Flute.17921802: The French Revolutionary Wars lead into the Napoleonic Wars, which last from 18031815.1792: The New York Stock & Exchange Board is founded.1792: PolishRussian War of 1792.1792: Margaret Ann Neve (17921903) would become the first recorded female supercentenarian to reach the age of 110.[27][28]1793: Upper Canada bans slavery.1793: The largest yellow fever epidemic in American history kills as many as 5,000 people in Philadelphia, roughly 10% of the population.[29]17931796: Revolt in the Vende against the French Republic at the time of the Revolution.17941816: The Hawkesbury and Nepean Wars, which were a series of incidents between settlers and New South Wales Corps and the Aboriginal Australian clans of the Hawkesbury river in Sydney, Australia.1795: The Marseillaise is officially adopted as the French national anthem.Napoleon at the Bridge of the Arcole1795: The Battle of Nuuanu in the final days of King Kamehameha I's wars to unify the Hawaiian Islands.17951796: Iran invades and devastates Georgia, prompting Russia to intervene and march on Tehran.1796: Edward Jenner administers the first smallpox vaccination; smallpox killed an estimated 400,000 Europeans each year during the 18th century, including five reigning monarchs.[30]1796: War of the First Coalition: The Battle of Montenotte marks Napoleon Bonaparte's first victory as an army commander.1796: The British eject the Dutch from Ceylon and South Africa.17961804: The White Lotus Rebellion against the Manchu dynasty in China.1797: John Adams is elected the second President of the United States; he serves until 1801.1798: The Irish Rebellion fails to overthrow British rule in Ireland.17981800: The Quasi-War is fought between the United States and France.1799: Dutch East India Company is dissolved.1799: Austro-Russian forces under Alexander Suvorov liberates much of Italy and Switzerland from French occupation.1799: Coup of 18 Brumaire - Napoleon's coup d'etat brings the end of the French Revolution.1799: Death of the Qianlong Emperor after 60 years of rule over China. His favorite official, Heshen, is ordered to commit suicide.1800: On 1 January, the bankrupt VOC is formally dissolved and the nationalized Dutch East Indies are established.[31]Main articles: Timeline of historic inventions 18th century, and Timeline of scientific discoveries 18th centuryThe spinning jenny1709: The first piano was built by Bartolomeo Cristofori1711: Tuning fork was invented by John Shore1712: Steam engine invented by Thomas Newcomen1714: Mercury thermometer by Daniel Gabriel Fahrenheit1717: Diving bell was successfully tested by Edmond Halley, sustainable to a depth of 55ftc. 1730: Octant navigational tool was developed by John Hadley in England, and Thomas Godfrey in America1733: Flying shuttle invented by John Kay1736: Europeans encountered rubber the discovery was made by Charles Marie de La Condamine while on expedition in South America. It was named in 1770 by Joseph Priestleyc. 1740: Modern steel was developed by Benjamin Huntsman1741: Vitus Bering discovers Alaska1745: Leyden jar invented by Ewald Georg von Kleist was the first electrical capacitor1751: Jacques de Vaucanson perfects the first precision lathe1752: Lightning rod invented by Benjamin Franklin1753: The first clock to be built in the New World (North America) was invented by Benjamin Banneker.1755: The tallest wooden Bodhisattva statue in the world is erected at Puning Temple, Chengde, China.1764: Spinning jenny created by James Hargreaves brought on the Industrial Revolution1765: James Watt enhances Newcomen's steam engine, allowing new steel technologies1761: The problem of longitude was finally resolved by the fourth chronometer of John Harrison1763: Thomas Bayes publishes first version of Bayes' theorem, paving the way for Bayesian probability17681779: James Cook mapped the boundaries of the Pacific Ocean and discovered many Pacific Islands1774: Joseph Priestley discovers "dephlogisticated air", oxygenThe Chinese Putuo Zongcheng Temple of Chengde, completed in 1771, during the reign of the Qianlong Emperor.1775: Joseph Priestley's first synthesis of "phlogisticated nitrous air", nitrous oxide, "laughing gas"1776: First improved steam engines installed by James Watt1776: Steamboat invented by Claude de Jouffroy1777: Circular saw invented by Samuel Miller1779: Photosynthesis was first discovered by Jan Ingenhousz1781: William Herschel announces discovery of Uranus1784: Bifocals invented by Benjamin Franklin1784: Argand lamp invented by Aim Argand[32]1785: Power loom invented by Edmund Cartwright1785: Automatic flour mill invented by Oliver Evans1786: Threshing machine invented by Andrew Meikle1787: Jacques Charles discovers Charles's law1789: Antoine Lavoisier discovers the law of conservation of mass, the basis for chemistry, and begins modern chemistry1798: Edward Jenner publishes a treatise about smallpox vaccination1798: The Lithographic printing process invented by Alois Senefelder[33]1799: Rosetta Stone discovered by Napoleon's troopsMain articles: 18th century in literature and 18th century in philosophy1703: The Love Suicides at Sonezaki by Chikamatsu first performed17041717: One Thousand and One Nights translated into French by Antoine Galland. The work becomes immensely popular throughout Europe.1704: A Tale of a Tub by Jonathan Swift first published1712: The Rape of the Lock by Alexander Pope (publication of first version)1719: Robinson Crusoe by Daniel Defoe1725: The New Science by Giambattista Vico1726: Gulliver's Travels by Jonathan Swift1728: The Dunciad by Alexander Pope (publication of first version)1744: A Little Pretty Pocket-Book becomes one of the first books marketed for children1748: Chushingura (The Treasury of Loyal Retainers), popular Japanese puppet play, composed1748: Clarissa; or, The History of a Young Lady by Samuel Richardson1749: The History of Tom Jones, a Foundling by Henry Fielding1751: Elegy Written in a Country Churchyard by Thomas Gray published17511785: The French Encyclopdie1755: A Dictionary of the English Language by Samuel Johnson1758: Arithmetika Horvatzka by Mihalj ilobod Boli1759: Candide by Voltaire1759: The Theory of Moral Sentiments by Adam Smith17591767: Tristram Shandy by Laurence Sterne1762: Emile: or, On Education by Jean-Jacques Rousseau1762: The Social Contract, Or Principles of Political Right by Jean-Jacques Rousseau1774: The Sorrows of Young Werther by Goethe first published1776: Ugetsu Monogatari (Tales of Moonlight and Rain) by Ueda Akinari1776: The Wealth of Nations, foundation of the modern theory of economy, was published by Adam Smith17761789: The History of the Decline and Fall of the Roman Empire was published by Edward Gibbon1779: Amazing Grace published by John Newton17791782: Lives of the Most Eminent English Poets by Samuel Johnson1781: Critique of Pure Reason by Immanuel Kant (publication of first edition)1781: The Robbers by Friedrich Schiller first published1782: Les Liaisons dangereuses by Pierre Choderlos de Laclos1786: Poems, Chiefly in the Scottish Dialect by Robert Burns17871788: The Federalist Papers by Alexander Hamilton, James Madison, and John Jay1788: Critique of Practical Reason by Immanuel Kant1789: Songs of Innocence by William Blake1789: The Interesting Narrative of the Life of Olaudah Equiano by Olaudah Equiano1790: Journey from St. Petersburg to Moscow by Alexander Radishchev1790: Reflections on the Revolution in France by Edmund Burke1791: Rights of Man by Thomas Paine1792: A Vindication of the Rights of Woman by Mary Wollstonecraft1794: Songs of Experience by William Blake1798: Lyrical Ballads by William Wordsworth and Samuel Taylor Coleridge1798: An Essay on the Principle of Population published by Thomas Malthus(mid18th century): The Dream of the Red Chamber (authorship attributed to Cao Xueqin), one of the most famous Chinese novels1711: Rinaldo, Handel's first opera for the London stage, premiered1721: Brandenburg Concertos by J.S. Bach1723: The Four Seasons, violin concertos by Antonio Vivaldi, composed1724: St John Passion by J.S. Bach1727: St Matthew Passion composed by J.S. Bach1727: Zadok the Priest is composed by Handel for the coronation of George II of Great Britain. It has been performed at every subsequent British coronation.1733: Hippolyte et Aricie, first opera by Jean-Philippe Rameau1741: Goldberg Variations for harpsichord published by Bach1742: Messiah, oratorio by Handel premiered in Dublin1749: Mass in B minor by J.S. Bach assembled in current form1751: The Art of Fugue by J.S. Bach1762: Orfeo ed Euridice, first "reform opera" by Gluck, performed in Vienna1786: The Marriage of Figaro, opera by Mozart1787: Don Giovanni, opera by Mozart1788: Jupiter Symphony (Symphony No. 41) composed by Mozart1791: The Magic Flute, opera by Mozart17911795: London symphonies by Haydn1798: The Pathtique, piano sonata by Beethoven1798: The Creation, oratorio by Haydn first performed^ Volkov, Sergey. 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The development of the economies of continental Europe, 18501914 (1977) onlineThe Wallace Collection, London, houses one of the finest collections of 18th-century decorative arts from France, England and Italy, including paintings, furniture, porcelain and gold boxes. Media related to 18th century at Wikimedia CommonsRetrieved from " 4The following pages link to 18th century External tools(link counttransclusion countsorted list) See help page for transcluding these entriesShowing 50 items.View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)List of decades, centuries, and millennia (links | edit)Goths (links | edit)Industrial espionage (links | edit)Romania (links | edit)20th century (links | edit)15th century (links | edit)16th century (links | edit)17th century (links | edit)1870s (links | edit)1624 (links | edit)1626 (links | edit)1642 (links | edit)1661 (links | edit)1756 (links | edit)1791 (links | edit)1608 (links | edit)1818 (links | edit)1743 (links | edit)1826 (links | edit)1828 (links | edit)14th century (links | edit)1860s (links | edit)1788 (links | edit)1st century (links | edit)13th century (links | edit)1787 (links | edit)1863 (links | edit)4th century (links | edit)12th century (links | edit)11th century (links | edit)1859 (links | edit)1900 (links | edit)1848 (links | edit)1866 (links | edit)1896 (links | edit)1895 (links | edit)1861 (links | edit)1648 (links | edit)1623 (links | edit)1662 (links | edit)1640s (links | edit)1770s (links | edit)1780s (links | edit)1789 (links | edit)1782 (links | edit)1840 (links | edit)1840s (links | edit)1883 (links | edit)1800s (decade) (links | edit)1801 (links | edit)View (previous 50 | next 50) (20 | 50 | 100 | 250 | 500)Retrieved from " WhatLinksHere/18th_century" Download Article Download Article Chemists, biologists, environmentalists, and lab technicians alike all use pH to measure the acidic and basic potentials of a solution. A pH meter is very useful and the most accurate tool available to test pH levels. There are many simple steps, from preparing your materials to methodically calibrating and testing, to ensure you have the most accurate reading of pH levels possible. 1Turn on your pH meter. Before you begin to calibrate and use your pH meter you will first need to turn it on and allow adequate time for the meter to warm up. This should generally take around 30 minutes, but check your pH meter's operating manual for exact times. 2Clean your electrode. Take the electrode out of its storage solution and rinse it with distilled water under an empty waste beaker. Once rinsed, blot dry with Kimwipes or Shurwipes, which are available at most office supply stores.[1]Be sure to rinse your electrode in a waste beaker that is different from the beaker you will be calibrating in.[2]Avoid rubbing the electrode as it has a sensitive membrane around it.If you find the electrode to be particularly dirty consult your operating manual for recommended cleaning solutions. Advertisement 3Prepare your buffers. You will generally need more than one buffer for calibrating a pH meter. The first will be a neutral buffer with a pH of 7, and the second should be near the expected sample pH, either a pH of 4 or 9.21. Buffers with a higher pH (9.21) are best for measuring bases, whereas buffers with a low pH (4) are best for measuring acidic samples. Once you have chosen your buffers allow them to reach the same temperature as the pH meter because pH readings are temperature dependent. Pour your buffers into individual beakers for calibration.[3]Check with your pH meter manufacturer, or current educational or professional institution, about acquiring pH buffer solutions.Buffers should be kept in a beaker for no longer than two hours.Discard the buffer when you are finished. Do not return it to its original container. Advertisement 1Place your electrode in the buffer with a pH value of 7 and begin reading. Press the measure or calibrate button to begin reading the pH once your electrode is placed in the buffer.[4]Allow the pH reading to stabilize before letting it sit for approximately 1-2 minutes.2Set the pH. Once you have a stable reading, set the pH meter to the value of the buffer's pH by pressing the measure button a second time. Setting the pH meter once the reading has stabilized will allow for more accurate and tuned readings.[5]Although not necessary, if you stir your buffer before measuring be sure to stir all other buffers and samples in the same way.3Rinse your electrode with distilled water. Rinse and pat dry with a lint-free tissue, like Kimwipes or Shurwipes, in between buffers.[6]4Place your electrode in the appropriate buffer for your sample and begin reading. Press the measure button to begin reading the pH once your electrode is placed in the buffer.[7]5Set the pH a second time. Once your reading has stabilized, set the pH meter to the value of the buffer's pH by pressing the measure button.[8]6Rinse your electrode. You can use distilled water to rinse. Use a lint-free tissue, like Kimwipes or Shurwipes, in between buffers to dry the electrode.[9] Advertisement 1Place your electrode in your sample and begin reading. 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Once rinsed, blot dry with Kimwipes or Shurwipes, which are available at most office supply stores.[1]Be sure to rinse your electrode in a waste beaker that is different from the beaker you will be calibrating in.[2]Avoid rubbing the electrode as it has a sensitive membrane around it.If you find the electrode to be particularly dirty consult your operating manual for recommended cleaning solutions. Advertisement 3Prepare your buffers. You will generally need more than one buffer for calibrating a pH meter. The first will be a neutral buffer with a pH of 7, and the second should be near the expected sample pH, either a pH of 4 or 9.21. Buffers with a higher pH (9.21) are best for measuring bases, whereas buffers with a low pH (4) are best for measuring acidic samples. Once you have chosen your buffers allow them to reach the same temperature as the pH meter because pH readings are temperature dependent. 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"This helped me in my task of performing a pH meter calibration in my laboratory, thank you!" Share your story Get the MedicineNet Daily newsletter for health tips, wellness updates and more. By clicking "Subscribe Now", I agree to the MedicineNet Terms and Conditions and Privacy Policy. I also agree to receive emails from MedicineNet and I understand that I may opt out of MedicineNet subscriptions at any time. Download Article Download Article Chemists, biologists, environmentalists, and lab technicians alike all use pH to measure the acidic and basic potentials of a solution. A pH meter is very useful and the most accurate tool available to test pH levels. There are many simple steps, from preparing your materials to methodically calibrating and testing, to ensure you have the most accurate reading of pH levels possible. 1Turn on your pH meter. Before you begin to calibrate and use your pH meter you will first

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