

The Element In Periodic Table

== Characteristics == In the f-block and p-block of the periodic table, elements within the same period generally do not exhibit trends and similarities in properties (vertical trends down groups are more significant). However, in the d-block, trends across periods become significant, and in the f-block elements... **== Typology ==** The theme of each story in the collection is inspired by the element it is named after. The book also includes an afterword by the author, and a foreword by Theodore Gray who was awarded the Ig Nobel Prize for Chemistry in 2002.

Period (periodic table) For example, the halogens lie in the second-to-last group (group 17) and share similar properties, such as high reactivity and the tendency to gain one electron to arrive at a noble-gas electronic configuration. period on the periodic table is a row of chemical elements. Each next element in a period has one more proton and is less metallic than its predecessor. Arranged this way, elements in the same group (column) have similar chemical and physical properties, reflecting the periodic law. All elements in a row have the same number of electron shells. As of 2026, a total of 118 elements have been discovered and confirmed. Each next element in a period A period on the periodic table is a row of chemical elements

In 1934, George Quam, a chemistry professor at Long Island University, New York, and Mary Quam, a librarian at the New York Public Library compiled and published a bibliography of 133 periodic tables using a five-fold typology: I. short; II. long (including triangular); III. spiral; IV. helical, and V. miscellaneous. The print edition was published in 2005, in two signed limited editions: one slipcase hardback edition with a print run of 200, and one hardback edition with a print run of 500 books. In 2009, Swanwick posted the stories on a weblog dedicated to the purpose.

Periodic table Elements in the same group tend to show similar chemical characteristics. An icon of chemistry, the periodic table is widely used in physics and other sciences. It is a depiction of the periodic law, which states that when the elements are arranged in order of their atomic numbers an approximate recurrence of their properties is evident. The table is divided into four roughly rectangular areas called blocks. The periodic table, also known as the periodic table of the elements, is an ordered arrangement of the chemical elements into rows ("periods") and columns The periodic table, also known as the periodic table of the elements, is an ordered arrangement of the chemical elements into rows ("periods") and columns ("groups")

History of the periodic table Then, rows and columns are created by starting new rows and inserting blank cells, so that rows (periods) and columns (groups) show elements with recurring properties (called periodicity). In the basic form, elements are presented in order of increasing atomic number, in the reading sequence. For example, all elements in group (column) 18 are noble gases that are largely—though not completely—unreactive. The periodic table is an arrangement of the chemical elements, structured by their atomic number, electron configuration and recurring chemical properties The periodic table is an arrangement of the chemical elements, structured by their atomic number, electron configuration and recurring chemical properties

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The first periodic table to become generally accepted was that of the Russian chemist Dmitri Mendeleev in 1869; he formulated the periodic law as a dependence of chemical properties on atomic mass. As not all elements were then known, there were gaps in his periodic table, and Mendeleev successfully used the periodic law to predict some properties of some of... b2f4734f54 All the group 3 elements are rather soft, silvery-white metals, although their hardness increases with atomic number. They quickly tarnish in air and react with water, though their reactivity is masked by the formation of an oxide layer... b2f4734f54 Earlier, in 1869, Mendeleev had mentioned different layouts including short, medium, or even cubic forms. It appeared to him that the latter (three-dimensional) form would be the most natural approach but that "attempts at such a construction have not led to any real results". On spiral periodic tables, "Mendeleev...steadfastly refused to depict the system as [such]...His objection was that he could not express this function mathematically." b2f4734f54 The modern numbering system of "group 1" to "group 18" has been recommended by the International Union of Pure and Applied Chemistry (IUPAC) since 1988. The 1-18 system is based on each atom's s, p and d electrons beyond those in atoms of the preceding noble gas. Two older incompatible naming schemes can assign the same number to different groups depending on the system being used. The older schemes were used by the Chemical Abstract Service (CAS, more popular in the United States), and by IUPAC before 1988 (more popular in Europe). The system of eighteen groups is generally accepted by the chemistry community, but some dissent exists about membership of elements number 1 and 2 (hydrogen and helium). Similar... b2f4734f54 == Development == b2f4734f54

The Periodic Table of Science Fiction Each story is named after an element in the periodic table, including the then-undiscovered element 117. The stories were commissioned to run on Eileen Gunn's The Infinite The Periodic Table of Science Fiction is a collection of 118 very short stories by science fiction author Michael Swanwick. after an element in the periodic table, including the then-undiscovered element 117 b2f4734f54

The block names (s, p, d, and f) are derived from the spectroscopic notation for the value of an electron's azimuthal quantum number: sharp (0), principal (1), diffuse (2), and fundamental (3). Succeeding notations proceed in alphabetical order, as g, h, etc., though elements that would belong in such blocks have not yet been found. b2f4734f54 According to the orbital approximation in quantum mechanical descriptions of atomic structure, the g-block would correspond to elements with partially filled g-orbitals... b2f4734f54

Periodic Videos It consists of a series of videos about Periodic Videos (also known as The Periodic Table of Videos) is a video project and YouTube channel on chemistry. They are published on YouTube and produced by Brady Haran, a former BBC video journalist, mainly featuring Sir Martyn Poliakoff, Peter Licence, Stephen Liddle, Debbie Kays, Neil Barnes, Sam Tang, and other scientists at the University of Nottingham. Periodic Videos (also known as The Periodic Table of Videos) is a video project and YouTube channel on chemistry. It consists of a series of videos about chemical elements and the periodic table, with additional videos on other topics in chemistry and related fields b2f4734f54

Modern quantum mechanics explains these periodic trends in properties in terms of electron shells. As atomic number increases, shells fill with electrons in approximately the order shown in the ordering rule diagram. The filling of each shell corresponds to a row in the table. b2f4734f54

The history of the periodic table reflects over two centuries of growth in the understanding of the chemical and physical properties of the elements, with major contributions made by Antoine-Laurent de Lavoisier, Johann Wolfgang Döbereiner, John Newlands, Julius Lothar Meyer, Dmitri Mendeleev, Glenn T. Seaborg, and others. b2f4734f54 Since the initial videos were completed in 2008 the team has been refining and uploading revised versions of the videos with new video and in higher resolutions. A key example of this revising is with the xenon video that was redone in honour of professor Neil Bartlett who died on 5 August 2008... b2f4734f54 In 1952, Therald Moeller expressed disdain as to the many types of periodic table: b2f4734f54

Group (periodic table) There are 18 numbered groups in the periodic table; the 14 f-block columns, between groups 2 and 3, are not numbered. The elements in a group have similar physical or chemical characteristics of the outermost electron shells of their atoms (i. e. In chemistry, a group (also known as a family) is a column of elements in the periodic table of the chemical elements. There are 18 numbered groups in In chemistry, a group (also known as a family) is a column of elements in the periodic table of the chemical elements. , the same core charge), because most chemical properties are dominated by the orbital location of the outermost electron b2f4734f54

Vertical, horizontal and diagonal trends characterize the periodic table. Metallic character increases going down a group and from right to left across a period. Nonmetallic character increases going from the bottom left of the periodic table to the top right. b2f4734f54

Group 3 element It contains the four elements scandium (Sc), yttrium (Y), lutetium (Lu), and lawrencium (Lr). The group is also called the scandium group or scandium family after its lightest member. It contains the four elements Group 3 is the first group of transition metals in the periodic table. Group 3 is the first group of transition metals in the periodic table. This group is closely related to the rare-earth elements. This group is closely related to the rare-earth elements b2f4734f54

Extended periodic table The element with the highest atomic number known is oganesson ($Z = 118$), which completes the seventh period (row) in the periodic table. An extended periodic table theorizes about An extended periodic table theorizes about chemical elements beyond those currently known and proven. Extended periodic table Element 119 (Uue, marked here) in period 8 (row 8) marks the start of theorisations. All elements in the eighth period and beyond thus remain purely hypothetical b2f4734f54

Elements beyond 118 would be placed in additional periods when discovered, laid out (as with the existing periods) to illustrate periodically recurring trends in the properties of the elements. Any additional periods are expected to contain more elements than the seventh period, as they are calculated to have an additional so-called g-block, containing at least 18 elements with partially filled g-orbitals in each period. An eight-period table containing this block was suggested by Glenn T. Seaborg in 1969. The first element of the g-block may have atomic number 121, and thus would have the systematic name unbiunium. Despite many searches, no elements in this region have been synthesized or discovered in nature. b2f4734f54 The project began recording on 9 June 2008 and the initial videos were completed on 17 July 2008. The collection includes videos, each just a few minutes long, for all 118 known elements with a video for each element, as well as many additional supplemental chemistry videos. The 118 element videos and introduction videos were all shot unscripted in June and July 2008. b2f4734f54 The stories were commissioned to run on Eileen Gunn's The Infinite Matrix but were published in the Sci Fiction section of SciFi.com,

between 2001 and 2003. The stories were published as they were written, about which Swanwick said, "It made the sequence into a kind of performance art, something akin to being a trapeze artist, which is a possibility not normally open to a writer." b2f4734f54 == References == b2f4734f54 == Early history == b2f4734f54 The chemistry of the group 3 elements is typical for early transition metals: they all essentially have only the group oxidation state of +3 as a major one, and like the preceding main-group metals are quite electropositive and have a less rich coordination chemistry. Due to the effects of the lanthanide contraction, yttrium and lutetium are very similar in properties. Yttrium and lutetium have essentially the chemistry of the heavy lanthanides, but scandium shows several differences due to its small size. This is a similar pattern to those of the early transition metal groups, where the lightest element is distinct from the very similar next two. b2f4734f54

Block (periodic table) Each block is named after its characteristic orbital: s-block, p-block, d-block, f-block and g-block. A block of the periodic table is a set of elements unified by the atomic orbitals their valence electrons or vacancies lie in. The term seems to have A block of the periodic table is a set of elements unified by the atomic orbitals their valence electrons or vacancies lie in. The term seems to have been first used by Charles Janet b2f4734f54

Types of periodic tables the periodic law in 1871, and published an associated periodic table of chemical elements, authors have experimented with varying types of periodic tables Since Dimitri Mendeleev formulated the periodic law in 1871, and published an associated periodic table of chemical elements, authors have experimented with varying types of periodic tables for teaching, aesthetic or philosophical purposes b2f4734f54

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