

On the cover: Photograph of crystals of Vitamin B<sub>12</sub>  
(Grazia Kuzel, University of Hawaii)

# McGraw-Hill Dictionary of Scientific and Technical Terms Fifth Edition

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On the cover: Photomicrograph of crystals of vitamin B<sub>12</sub>.  
(Dennis Kunkel, University of Hawaii)

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$K(A)$ , the Grothendieck group of  $A$ . { 'al-jə,'brä-ik 'kä ,thə-ə-rē }

**algebraic language** [MATH] The conventional method of writing the symbols, parentheses, and other signs of formulas and mathematical expressions. { 'al-jə,'brä-ik 'laŋ-gwɪj }

**algebraic manipulation language** [COMPUT SCI] A programming language used in the solution of analytic problems by symbolic computation. { 'al-jə,'brä-ik mə-ni-pyə-'lā-shən ,laŋ-gwɪj }

**algebraic number** [MATH] Any root of a polynomial with rational coefficients. { 'al-jə,'brä-ik 'nəm-bər }

**algebraic number field** [MATH] A finite extension field of the field of rational numbers. { 'al-jə,'brä-ik 'nəm-bər ,fɛld }

**algebraic number theory** [MATH] The study of properties of real numbers, especially integers, using the methods of abstract algebra. { 'al-jə,'brä-ik 'nəm-bər ,thə-ə-rē }

**algebraic object** [MATH] Either an algebraic structure, such as a group, ring, or field, or an element of such an algebraic structure. { 'al-jə,'brä-ik 'əb-jekt }

**algebraic operation** [MATH] Any of the operations of addition, subtraction, multiplication, division, raising to a power, or extraction of roots. { 'al-jə,'brä-ik ,əp-ə-'rā-shən }

**algebraic scattering theory** [PHYS] An approach to the analysis of reactions between composite particles in which the fundamental role is played by the scattering matrix, which is obtained algebraically, without the use of a wave equation, by using the concept of dynamic symmetry. { 'al-jə,'brä-ik 'skad-ə-rɪŋ ,thə-ə-rē }

**algebraic set** [MATH] A set made up of all zeros of some specified set of polynomials in  $n$  variables with coefficients in a specified field  $F$ , in a specified extension field of  $F$ . { 'al-jə,'brä-ik 'set }

**algebraic sum** [MATH] 1. The result of the addition of two or more quantities, with the addition of a negative quantity equivalent to subtraction of the corresponding positive quantity. 2. For two fuzzy sets  $A$  and  $B$ , with membership functions  $m_A$  and  $m_B$ , that fuzzy set whose membership function  $m_{A+B}$  satisfies the equation  $m_{A+B}(x) = m_A(x) + m_B(x) - [m_A(x) \cdot m_B(x)]$  for every element  $x$ . { 'al-jə,'brä-ik 'səm }

**algebraic surface** [MATH] A subset  $S$  of a complex  $n$ -space which consists of the set of complex solutions of a system of polynomial equations in  $n$  variables such that  $S$  is a complex two-manifold in the neighborhood of most of its points. { 'al-jə,'brä-ik 'sərfəs }

**algebraic symbol** [MATH] A letter that represents a number or a symbol indicating an algebraic operation. { 'al-jə,'brä-ik 'sɪm-bəl }

**algebraic term** [MATH] In an expression, a term that contains only numbers and algebraic symbols. { 'al-jə,'brä-ik 'tərm }

**algebraic topology** [MATH] The study of topological properties of figures using the methods of abstract algebra; includes homotopy theory, homology theory, and cohomology theory. { 'al-jə,'brä-ik tə-'päl-ə-jē }

**algebra of subsets** [MATH] An algebra of subsets of a set  $S$  is a family of subsets of  $S$  that contains the null set, the complement (relative to  $S$ ) of each of its members, and the union of any two of its members. { 'al-jə-'brə əv 'səb ,sets }

**algebra with identity** [MATH] An algebra which has an element, not equal to 0 and denoted by 1, such that, for any element  $x$  in the algebra,  $x1 = 1x = x$ . { 'al-jə-'brə wɪθ 'ɪ-den-ə-tē }

**algid malaria** See falciparum malaria. { 'al-jəd mə-'ler-ē-ə }

**Algenib** [ASTRON] A star in the constellation Pegasus. { 'al-'jen-əb }

**Algerian onyx** See onyx marble. { 'al-'jer-ē-ən 'æn-ɪks }

**algnesia** [PHYSIO] Sensitivity to pain. { 'al-'jēz-ē-ə }

**algometer** [PHYSIO] A device used to determine pain thresholds. { 'al-jə-'sɪm-ə-d-ər }

**algesroreceptor** [PHYSIO] A pain-sensitive cutaneous sense organ. { 'al-jə-'sɪr-rō-'nɪ ,sep-tər }

**algicide** [MATER] A chemical used to kill algae. { 'al-jə,'sɪd }

**algin** [MATER] A hydrophilic polysaccharide extracted from brown algae, such as giant kelp. [ORG CHEM] See sodium alginate. { 'al-'jɒn }

**alginite** [BOT] An algal polysaccharide that is a major constituent of the cell walls of brown algae. { 'al-jə,'nɪt }

**alginic acid** [ORG CHEM]  $(C_6H_7O_6)_n$  An insoluble colloidal acid obtained from brown marine algae; it is hard when dry and absorbent when moist. Also known as algin. { 'al-'jɪn-ɪk 'as-əd }

**alginic acid sodium salt** See sodium alginate. { 'al-'jɪn-ɪk 'as-əd 'sɒd-ē-əm 'sɒlt }

**alginite** See alginite. { 'al-jə,'nɪt }

**alglite** [PETR] The petrological unit that constitutes algal material present in considerable amounts in algal or boghead coal. Also known as alginite. { 'al-'jɪt }

**algonolite** [MINERAL]  $Cu_6As$  A steel gray to silver white mineral consisting of copper arsenide and occurring as minute hexagonal crystals or in massive and granular form. { 'al-'gɒl-ə,'nɪt }

**Algol** [ASTRON] An eclipsing variable star of spectral classification B8 in the constellation Perseus; the star  $\beta$  Persei. Also known as Demon Star. [COMPUT SCI] An algorithmic and procedure-oriented computer language used principally in the programming of scientific problems. { 'al-'gɒl }

**algology** [BOT] The study of algae. Also known as phycology. { 'al-'gɒl-ə-'jɛ }

**Algol symbiotic** [ASTRON] A symbiotic star consisting of a red giant, a main-sequence star, and an accretion disk of gas from the red giant that forms around the main-sequence star and is heated by it. { 'al-'gɒl ,sɪm-'bɪ-əd-ɪk }

**Algonian orogeny** [GEOL] Orogenic episode affecting Archean rocks of Canada about 2.4 billion years ago. Also known as Kenoran orogeny. { 'al-'gɒm-ən ɔ-'rɒj-ə-nē }

**algometer** [MED] An instrument for measuring pressure stimuli which produce pain. { 'al-'gæ-mə-d-ər }

**Algonkian** [GEOL] Geologic time between the Archean and Paleozoic. Also known as Proterozoic. { 'al-'gɒŋ-'kɛ-ən }

**algophage** See cyanophage. { 'al-'gə,'fəj }

**algorphobia** [PSYCH] Abnormal fear of pain. { 'al-'gə-'fɒb-ɪ-ə }

**algorithm** [MATH] A set of well-defined rules for the solution of a problem in a finite number of steps. { 'al-'gɒ,'rɪθ-əm }

**algorithmic error** [COMPUT SCI] An error in computer processing resulting from imprecision in the method used to carry out mathematical computations, usually associated with either rounding or truncation of numbers. { 'al-'gɒ,'rɪθ-'mɪk 'er-ər }

**algorithmic language** [COMPUT SCI] A language in which a procedure or scheme of calculations can be expressed accurately. { 'al-'gɒ,'rɪθ-'mɪk 'laŋ-gwɪj }

**algorithm translation** [COMPUT SCI] A step-by-step computerized method of translating one programming language into another programming language. { 'al-'gɒ,'rɪθ-əm tranz-'lɪk-shən }

**algor mortis** [PATH] Postmortem cooling of the body. { 'al-'gɒ,'mɔrt-ɪs }

**alias** [COMPUT SCI] 1. An alternative entry point in a computer subroutine at which its execution may begin, if so instructed by another routine. 2. An alternative name for a file or device. [STAT] Either of two effects in a factorial experiment which cannot be differentiated from each other on the basis of the experiment. { 'æ-'li-əs }

**aliasing** [COMPUT SCI] In computer graphics, the jagged appearance of diagonal lines on printouts and on video monitors. [MATH] Introduction of error into the computed amplitudes of the lower frequencies in a Fourier analysis of a function carried out using discrete time samplings whose interval does not allow the proper analysis of the higher frequencies present in the analyzed function. { 'æ-'li-əs-ɪŋ }

**alicyclic** [ORG CHEM] 1. Having the properties of both aliphatic and cyclic substances. 2. Referring to a class of saturated hydrocarbon compounds whose structures contain one ring. Also known as cycloaliphatic; cycloalkane. 3. Any one of the compounds of the alicyclic class. Also known as cyclane. { 'æ-'sɪ-'kɪk-ɪk }

**alidade** [ENG] 1. An instrument for topographic surveying and mapping by the plane-table method. 2. Any sighting device employed for angular measurement. { 'al-ə,'dɪd }

**alien substitution** [GEN] The replacement of one or more chromosomes by those from a different species. { 'æ-'li-ən ,səb-stə-'tɪʃ-ən }

**allesterase** [BIOCHEM] Any one of the lipases or nonspecific esterases. { 'al-'ē-'es-tə,'ræs }

**aligning drift** [MECH ENG] A rod or bar that is used for aligning parts during assembly. { 'ə-'lɪn-ɪŋ ,drɪft }

**alignment** [ARCHEO] An arrangement of a single row or of multiple rows of standing stones at a sites formerly occupied by humans. [CIV ENG] In a survey for a highway, railroad, or similar installation, a ground plan that shows the horizontal

ALCYONADA

ALIDADE



A surveying alidade, having a telescope with attached graduated vertical circle, mounted on a flat base that can be moved about the table. (Kern Instruments, Inc.)