

Tổng hợp Từ vựng Học thuật (Academic Vocabulary) - Chủ đề Khoa học

Dưới đây là danh sách các từ vựng học thuật quan trọng và thường gặp trong lĩnh vực Khoa học, được chia theo các chuyên ngành cụ thể. Việc nắm vững các từ này sẽ giúp học sinh đọc hiểu tài liệu chuyên ngành, viết bài luận và tham gia thảo luận về các chủ đề khoa học một cách hiệu quả.

I. General Scientific Process & Terminology (Quy trình & Thuật ngữ Khoa học Chung)

Đây là những thuật ngữ nền tảng được sử dụng trong mọi lĩnh vực khoa học để mô tả quá trình nghiên cứu và khám phá.

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Hypothesis	(n)	/haɪ'pɒθ.ə.sɪs/	Giả thuyết	<p>An idea or explanation for something that is based on known facts but has not yet been proved.</p> <p><i>Example: The team proposed a new hypothesis about the cause of the disease.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Theory	(n)	/'θiə.ri/	Học thuyết	<p>A well-substantiated explanation of some aspect of the natural world, based on a body of facts that have been repeatedly confirmed through observation and experiment.</p> <p><i>Example: Einstein's theory of relativity transformed our understanding of space and time.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Experiment	(n)	/ɪk'sper.ɪ.mənt/	Thí nghiệm	<p>A scientific procedure undertaken to make a discovery, test a hypothesis, or demonstrate a known fact.</p> <p><i>Example: They conducted an experiment to test the drug's effectiveness.</i></p>
Analysis	(n)	/ə'næl.ə.sɪs/	Sự phân tích	<p>The detailed examination of the elements or structure of something.</p> <p><i>Example: The chemical analysis of the water sample revealed high levels of pollutants.</i></p>

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Data	(n)	/'deɪ.tə/	Dữ liệu	Facts and statistics collected together for reference or analysis. <i>Example: The researchers are still collecting data for their study.</i>
Variable	(n)	/'veə.ri.ə.bəl/	Biến số	An element, feature, or factor that is liable to vary or change in an experiment. <i>Example: In this experiment, temperature is the independent variable.</i>

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Conclusion	(n)	/kən'kluzən/	Kết luận	<p>A judgement or decision reached by reasoning based on the evidence found.</p> <p><i>Example: The conclusion of the report was that the new method was more efficient.</i></p>
Evidence	(n)	/'ev.ɪ.dəns/	Bằng chứng	<p>The available body of facts or information indicating whether a belief or proposition is true or valid.</p> <p><i>Example: There is compelling evidence that smoking causes cancer.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Observation	(n)	/ˌɒb.zə'veɪ.ʃən/	Sự quan sát	<p>The action or process of observing something or someone carefully in order to gain information.</p> <p><i>Example: Scientific theories are based on careful observation of the world.</i></p>
Procedure	(n)	/prə'siː.dʒər/	Quy trình, thủ tục	<p>An established or official way of doing something, especially in a scientific context.</p> <p><i>Example: Follow the standard laboratory procedure to ensure safety and accuracy.</i></p>

II. Biology (Sinh học)

Các thuật ngữ chuyên ngành liên quan đến nghiên cứu sự sống và các sinh vật sống.

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Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Photosynthesis	(n)	/ˌfəʊ.təʊˈsɪn.θə.sɪs/	Quang hợp	<p>The process by which green plants use sunlight to synthesize foods from carbon dioxide and water.</p> <p><i>Example:</i></p> <p>Photosynthesis is vital for producing oxygen in the atmosphere.</p>
				<p>The process in which cells of an organism obtain energy by combining oxygen and</p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Cell	(n)	/sel/	Tế bào	The smallest structural and functional unit of an organism. <i>Example: The human body is made up of trillions of cells.</i>

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DNA	(n)	/ˌdiː.en'eɪ/	ADN	<p>Deoxyribonucleic acid, a self-replicating material which is present in nearly all living organisms as the main constituent of chromosomes. It is the carrier of genetic information.</p> <p><i>Example:</i></p> <p><i>Scientists can use DNA to identify individuals.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Gene	(n)	/dʒiːn/	Gen	<p>A unit of heredity which is transferred from a parent to offspring and is held to determine some characteristic of the offspring.</p> <p><i>Example: A specific gene is responsible for eye color.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Ecosystem	(n)	/'i:.kəʊ,sɪs.təm/	Hệ sinh thái	A biological community of interacting organisms and their physical environment. <i>Example: The rainforest ecosystem is incredibly diverse.</i>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Evolution	(n)	/,iː.vəˈluːʃən/	Sự tiến hóa	<p>The process by which different kinds of living organisms are thought to have developed and diversified from earlier forms during the history of the earth.</p> <p><i>Example:</i></p> <p><i>Darwin's theory of evolution is a cornerstone of modern biology.</i></p>



Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Metabolism	(n)	/mə'tæb.əl.ɪ.zəm/	Sự trao đổi chất	<p>The chemical processes that occur within a living organism in order to maintain life.</p> <p><i>Example:</i></p> <p><i>Regular exercise can help to boost your metabolism.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Enzyme	(n)	/'en.zaɪm/	Enzyme	<p>A substance produced by a living organism which acts as a catalyst to bring about a specific biochemical reaction.</p> <p><i>Example: The digestive system uses various enzymes to break down food.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Species	(n)	/'spi:.ʃi:z/	Loài	A group of living organisms consisting of similar individuals capable of exchanging genes or interbreeding. <i>Example: Many plant and animal species are in danger of extinction.</i>

III. Chemistry (Hóa học)

Các thuật ngữ chuyên ngành liên quan đến nghiên cứu vật chất, thành phần, cấu trúc và các phản ứng của chúng.

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Atom	(n)	/'æt.əm/	Nguyên tử	<p>The basic unit of a chemical element.</p> <p><i>Example: A water molecule consists of two hydrogen atoms and one oxygen atom.</i></p>
Molecule	(n)	/'mɒl.i.kju:l/	Phân tử	<p>A group of atoms bonded together, representing the smallest fundamental unit of a chemical compound that can take part in a chemical reaction.</p> <p><i>Example: Oxygen in the air exists as a molecule containing two oxygen atoms (O₂).</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Element	(n)	/ˈel.i.mənt/	Nguyên tố	<p>A substance whose atoms all have the same number of protons; a substance that cannot be broken down by chemical means.</p> <p><i>Example: Gold is a precious chemical element with the symbol Au.</i></p>
Compound	(n)	/ˈkɒm.paʊnd/	Hợp chất	<p>A substance formed when two or more chemical elements are chemically bonded together.</p> <p><i>Example: Water (H₂O) is a compound of hydrogen and oxygen.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Reaction	(n)	/ri'æk.fən/	Phản ứng	<p>A process that involves rearrangement of the molecular or ionic structure of a substance, as opposed to a change in physical form.</p> <p><i>Example: The chemist observed a vigorous reaction when the two chemicals were mixed.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Catalyst	(n)	/'kæt.əl.ɪst/	Chất xúc tác	<p>A substance that increases the rate of a chemical reaction without itself undergoing any permanent chemical change.</p> <p><i>Example: Platinum is often used as a catalyst in industrial processes.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Acid	(n)	/'æ.s.ɪd/	Axit	<p>A chemical substance that neutralizes alkalis, dissolves some metals, and turns litmus red; typically, a corrosive or sour-tasting liquid.</p> <p><i>Example: Lemon juice contains citric acid, which gives it a sour taste.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Base	(n)	/beɪs/	Bazơ	<p>A substance capable of reacting with an acid to form a salt and water, or (more broadly) of accepting or neutralizing hydrogen ions.</p> <p><i>Example: Sodium hydroxide is a strong base used in making soap.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Solution	(n)	/sə'lu:ʃən/	Dung dịch	<p>A liquid mixture in which the minor component (the solute) is uniformly distributed within the major component (the solvent).</p> <p><i>Example: He dissolved the salt in water to create a saline solution.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Bond	(n)	/bond/	Liên kết (hóa học)	<p>A strong force of attraction holding atoms together in a molecule or crystal, resulting from the sharing or transfer of electrons.</p> <p><i>Example: The covalent bond between hydrogen and oxygen atoms forms a water molecule.</i></p>

IV. Physics (Vật lý)

Các thuật ngữ chuyên ngành liên quan đến nghiên cứu vật chất, năng lượng và các tương tác cơ bản của tự nhiên.

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Gravity	(n)	/'græv.ə.ti/	Trọng lực	<p>The force that attracts a body towards the centre of the earth, or towards any other physical body having mass.</p> <p><i>Example: Newton's law of universal gravity explains why apples fall from trees.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Energy	(n)	/ˈen.ə.dʒi/	Năng lượng	<p>The capacity or power to do work, such as the capacity to move an object (of a given mass) by the application of force.</p> <p><i>Example: Solar panels convert sunlight into electrical energy.</i></p>
Force	(n)	/fɔːs/	Lực	<p>An influence tending to change the motion of a body or produce motion or stress in a stationary body.</p> <p><i>Example: The force of the impact was strong enough to dent the car door.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Velocity	(n)	/və'ləs.ə.ti/	Vận tốc	<p>The speed of something in a given direction.</p> <p><i>Example: The escape velocity from Earth is about 11.2 kilometers per second.</i></p>
Acceleration	(n)	/ək,sel.ə'reɪ.ʃən/	Gia tốc	<p>The rate of change of velocity per unit of time.</p> <p><i>Example: The car has an impressive acceleration, going from 0 to 100 km/h in 5 seconds.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Quantum	(n)	/'kwɒn.təm/	Lượng tử	<p>The minimum amount of any physical entity (physical property) involved in an interaction.</p> <p><i>Example: Quantum mechanics is the branch of physics that studies the behavior of matter and light on the atomic and subatomic scale.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Relativity	(n)	/,rel.ə'tɪv.ə.ti/	Thuyết tương đối	<p>The absence of standards of absolute and universal application. In physics, it refers to Einstein's theories.</p> <p><i>Example: The theory of relativity includes both special and general relativity.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Wavelength	(n)	/'weɪv.lənθ/	Bước sóng	<p>The distance between successive crests of a wave, especially points in a sound wave or electromagnetic wave.</p> <p><i>Example: Red light has a longer wavelength than blue light.</i></p>
Friction	(n)	/'frɪk.ʃən/	Lực ma sát	<p>The resistance that one surface or object encounters when moving over another.</p> <p><i>Example: Brakes on a car use friction to slow it down.</i></p>

Word	Type	Pronunciation	Vietnamese Meaning	English Definition & Example
Momentum	(n)	/mə'men.təm/	Động lượng	<p>The quantity of motion of a moving body, measured as a product of its mass and velocity.</p> <p><i>Example: The truck gained momentum as it rolled down the hill.</i></p>