Academic Word List

The Academic Word List: a corpus-based word list for academic purposes

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The Academic Word List (AWL) (Coxhead, 1998) was developed from a corpus of approximately 3,500,000 running words of written academic text by examining the range, frequency and uniformity of occurrence of words outside the first 2,000 words of English (West, 1953). This corpus contains four disciplines (arts, commerce, law and science) and each discipline is made up of seven subject areas. The 570 word families in the AWL account for approximately 10% of the total words (tokens) in the corpus described above. In contrast, the list covers only 1.4% of the total words in an equally-sized collection of fiction. This difference in coverage indicates that the list is predominantly academic in nature. The AWL provides useful information about which words give the best return for learning for students with academic goals, and highlights the words which learners will meet in a wide range of academic texts. The list also provides a useful basis for further research into the nature of academic vocabulary. The division of this word list into smaller, frequency-based sublists helps in the sequencing of teaching and materials, so that a systematic approach to vocabulary learning can be taken.

Bibliography

Bauer, L. and Nation, I. S. P. (1993). "Word families." *International Journal of Lexicography* 6, 4: 253-279.

Biber, D. (1993) "Representativeness in corpus design." *Literary and Linguistic Computing* 8,4: 243-257.

Biber, D., Conrad, S. and Reppen, R. (1998) *Corpus Linguistics: Investigating Language Structure and Use*. Cambridge: Cambridge University Press.

Campion, M. and Elley, W. (1971). *An Academic Vocabulary List*. Wellington: New Zealand Council for Educational Research.

Coxhead, A.J. (1998). *An Academic Word List*. English Language Institute Occasional Publication Number 18. Wellington: Victoria University of Wellington

Coxhead, A.J. (1998). *The development and evaluation of an academic word list*. Unpublished M.A. Thesis. Wellington: Victoria University of Wellington.

Francis, W.N. and Kucera, H. (1982). *Frequency Analysis of English Usage*. Boston: Houghton Mifflin Company.

Kennedy, G. (1998) *An Introduction to Corpus Linguistics*. London: Longman.

Nation, I.S.P. (1990). *Teaching and Learning Vocabulary*. New York: Heinle and Heinle.

Praninskas, J. (1972). *American University Word List*. London: Longman.

Sutarsyah, C., Nation, P. and Kennedy, G. (1994). "How useful is EAP vocabulary for ESP?" *RELC Journal* 25, 2: 3450.

West, M. (1953). *A General Service List of English Words*. London: Longman, Green and Co.

Wichmann, A. Fligelstone, S., McEnery, T. and Knowles, G. (eds.) (1997). *Teaching and Language Corpora*. Harlow: Addison Wesley Longman.

Xue, Guoyi and Nation, I.S.P. (1984). "A university word list." *Language Learning and Communication* 3, 2: 215229.

Selecting vocabulary: Academic word list

Academic Word List Coxhead (2000). The most frequent word in each family is in italics. There are 570 headwords and about 3000 words altogether. For more information see The Academic Word List.

*Definitions linked to Cambridge Learner's Dictionary

Headwords	Other words in the family	Definition*
abandon	abandoned, abandoning, abandonment, abandons	abandon
abstract	abstraction, abstractions, abstractly, abstracts	abstract
academy	academia, *academic*, academically, academics, academies	academy
access	accessed, accesses, accessibility, accessible, accessing, inaccessible	access
accommodate	accommodated, accommodates, accommodating, *accommodation*	accommodate
accompany	*accompanied*, accompanies, accompaniment, accompanying, unaccompanied	accompany
accumulate	accumulated, accumulating, *accumulation,* accumulates	accumulate
accurate	accuracy, accurately, inaccuracy, inaccuracies, inaccurate	accurate
achieve	achievable, achieved, achievement, achievements, achieves, achieving	achieve
acknowledge	*acknowledged,* acknowledges, acknowledging, acknowledgement, acknowledgements	acknowledge
acquire	acquired, acquires, acquiring, *acquisition*, acquisitions	acquire
adapt	adaptability, adaptable, *adaptation,* adaptations, adapted, adapting, adaptive, adapts	adapt
adequate	adequacy, adequately, inadequacies, inadequacy, inadequate, inadequately	adequate
adjacent		adjacent
adjust	adjusted, adjusting, *adjustment,* adjustments, adjusts, readjust, readjusted, readjusting, readjustment, readjustments, readjusts	adjust
administrate	administrates, *administration,* administrations, administrative, administratively, administrator, administrators	administrate
adult	adulthood, *adults*	adult
advocate	advocacy, advocated, advocates, advocating	advocate
affect	affected, affecting, affective, affectively, affects, unaffected	affect

aggregate	aggregated, aggregates, aggregating, aggregation	aggregate
aid	aided, aiding, aids, unaided	aid
albeit		albeit
allocate	allocated, allocates, allocating, *allocation,* allocations	allocate
alter	alterable, alteration, alterations, altered, altering, alternate, alternating, alters, unalterable, unaltered	alter
alternative	alternatively, alternatives	alternative
ambiguous	ambiguities, ambiguity, unambiguous, unambiguously	ambiguous
amend	amended, amending, *amendment,* amendments, amends	amend
analogy	analogies, *analogous*	analogy
analyze	analyzed, analyzer, analyzers, analyses, analyzing, *analysis*, analyst, analysts, analytic, analytical, analytically	analyze
annual	annually	annual
anticipate	*anticipated,* anticipates, anticipating, anticipation, unanticipated	anticipate
apparent	apparently	apparent
append	*appendix*, appended, appends, appending, appendices, appendixes	append
appreciate	appreciable, appreciably, appreciated, appreciates, appreciating, *appreciation,* unappreciated	appreciate
approach	approachable, approached, approaches, approaching, unapproachable	approach
appropriate	appropriacy, appropriately, appropriateness, inappropriacy, inappropriate, inappropriately	appropriate
approximate	*approximated*, approximately, approximates, approximating, approximation, approximations	approximate
arbitrary	arbitrariness, arbitrarily	arbitrary
area	areas	area
aspect	*aspects*	aspect
assemble	assembled, assembles, assemblies, assembling, *assembly*	assemble
assess	assessable, assessed, assesses, assessing, *assessment*, assessments, reassess, reassessed, reassessing, reassessment, unassessed	assess
assign	*assigned,* assigning, assignment, assignments, assigns, reassign, reassigned, reassigning, reassigns, unassigned	assign
assist	*assistance,* assistant, assistants, assisted, assisting, assists, unassisted	assist
assume	assumed, assumes, assuming, assumption, assumptions	assume

assure	*assurance*, assurances, assured, assuredly, assures, assuring	assure
attach	*attached,* attaches, attaching, attachment, attachments, unattached	attach
attain	attainable, *attained*, attaining, attainment, attainments, attains, unattainable	attain
attitude	*attitudes*	attitude
attribute	attributable, *attributed,* attributes, attributing, attribution	attribute
author	authored, authoring, authors, authorship	author
authority	authoritative, authorities	authority
automate	automatic, automated, automates, automating, *automatically*, automation	automate
available	availability, unavailable	available
aware	awareness, unaware	aware
behalf		behalf
benefit	beneficial, beneficiary, beneficiaries, benefited, benefiting, benefits	benefit
bias	biased, biases, biasing, unbiased	bias
bond	bonded, bonding, bonds	bond
brief	brevity, briefed, briefing, briefly, briefs	brief
bulk	bulky	bulk
capable	capabilities, capability, incapable	capable
capacity	capacities, incapacitate, incapacitated	capacity
category	*categories*, categorization, categorize, categorized, categorizes, categorizing, categorizing	category
cease	ceased, ceaseless, *ceases*, ceasing	cease
challenge	challenged, challenger, challengers, challenges, challenging	challenge
channel	channeled, channeling, channels	channel
chapter	chapters	chapter
chart	charted, charting, charts, uncharted	chart
chemical	chemically, chemicals	chemical
circumstance	*circumstances*	circumstance
cite	citation, citations, *cited,* citing, cites	cite
civil		civil
clarify	clarification, clarified, clarifies, clarifying, *clarity*	clarify
classic	*classical,* classics	classic

clause	clauses	clause
code	coded, codes, coding	code
coherent	*coherence*, coherently, incoherent, incoherently	coherent
coincide	coincided, coincides, coinciding, coincidence, coincidences, coincident, coincidental	coincide
collapse	collapsed, collapses, collapsible, collapsing	collapse
colleague	*colleagues*	colleague
commence	*commenced*, commences, commencement, commencing, recommences, recommenced, recommencing	commence
comment	commentaries, commentary, commentator, commentators, commented, commenting, *comments*	comment
commission	commissioned, commissioner, commissioners, commissioning, commissions	commission
commit	*commitment,* commitments, commits, committed, committing	commit
commodity	commodities	commodity
communicate	communicable, communicated, communicates, communicating, *communication*, communications, communicative, communicatively, uncommunicative	communicate
community	communities	community
compatible	compatibility, incompatibility, *incompatible*	compatible
compensate	compensated, compensates, compensating, *compensation*, compensations, compensatory	compensate
compile	compilation, compilations, *compiled*, compiles, compiling	compile
complement	complementary, complemented, complementing, complements	complement
complex	complexities, complexity	complex
component	componentry, *components*	component
compound	compounded, compounding, *compounds*	compound
comprehensive	comprehensively	comprehensive
comprise	comprised, comprises, comprising	comprise
compute	computation, computational, computations, computable, *computer*, computed, computerized, computers, computing	compute
conceive	conceivable, conceivably, *conceived*, conceives, conceiving, inconceivable, inconceivably	conceive
concentrate	concentrated, concentrates, concentrating, *concentration*	concentrate
concept	conception, concepts, conceptual, conceptualization, conceptualize, conceptualized, conceptualizes, conceptualizing, conceptually	concept

conclude	concluded, concludes, concluding, *conclusion*, conclusions, conclusive, conclusively, inconclusive, inconclusively	conclude
concurrent	concurrently	concurrent
conduct	conducted, conducting, conducts	conduct
confer	*conference,* conferences, conferred, conferring, confers	confer
confine	*confined*, confines, confining, unconfined	confine
confirm	confirmation, *confirmed,* confirming, confirms	confirm
conflict	conflicted, conflicting, conflicts	conflict
conform	conformable, conformability, conformance, conformation, conformed, conforming, conformist, conformists, *conformity*, conforms, nonconformist, nonconformists, nonconformity, non-conformist, non-conformists, non-conformity	conform
consent	consensus, consented, consenting, consents	consent
consequent	consequence, *consequences*, consequently	consequent
considerable	considerably	considerable
consist	consisted, consistency, *consistent*, consistently, consisting, consists, inconsistencies, inconsistency, inconsistent	consist
constant	constancy, constantly, constants, inconstancy, inconstantly	constant
constitute	constituencies, constituency, constituent, constituents, constituted, constitutes, constituting, constitution, constitutions, *constitutional*, constitutionally, constitutive, unconstitutional	constitute
constrain	constrained, constraining, constrains, constraint, *constraints*, unconstrained	constrain
construct	constructed, constructing, *construction*, constructions, constructive, constructs, reconstruct, reconstructed, reconstructing, reconstruction, reconstructs	construct
consult	consultancy, consultant, consultants, *consultation,* consultations, consultative, consulted, consults, consulting	consult
consume	consumed, *consumer,* consumers, consumes, consuming, consumption	consume
contact	contactable, contacted, contacting, contacts	contact
contemporary	contemporaries	contemporary
context	contexts, contextual, contextualize, contextualized, contextualizing, uncontextualized	context
contract	contracted, contracting, contractor, contractors, contracts	contract
contradict	contradicted, contradicting, *contradiction*, contradictions, contradictory, contradicts	contradict

contrary	contrarily	contrary
contrast	contrasted, contrasting, contrastive, contrasts	contrast
contribute	contributed, contributes, contributing, *contribution*, contributions, contributor, contributors	contribute
controversy	controversies, controversial, controversially, uncontroversial	controversy
convene	*convention*, convenes, convened, convening, conventional, conventionally, conventions, unconventional	convene
converse	*conversely*	converse
convert	conversion, conversions, *converted,* convertible, converting, converts	convert
convince	*convinced*, convinces, convincing, convincingly, unconvinced	convince
cooperate	cooperated, cooperates, cooperating, cooperation, *cooperative,* cooperatively, co-operate, co-operated, co-operates, co-operation, co-operative, co-operatively	cooperate
coordinate	coordinated, coordinates, coordinating, *coordination*, coordinator, coordinators, co-ordinate, co-ordinated, co-ordinates, co-ordinating, co-ordination, co-ordinator, co-ordinators	coordinate
core	cores, coring, cored	core
corporate	corporates, corporation, corporations	corporate
correspond	corresponded, correspondence, *corresponding*, correspondingly, corresponds	correspond
couple	coupled, coupling, couples	couple
create	created, creates, creating, creation, creations, creative, creatively, creativity, creator, creators, recreate, recreated, recreates, recreating	create
credit	credited, crediting, creditor, creditors, credits	credit
criteria	criterion	criteria
crucial	crucially	crucial
culture	*cultural,* culturally, cultured, cultures, uncultured	culture
currency	currencies	currency
cycle	cycled, cycles, cyclic, cyclical, cycling	cycle
data		data
debate	debatable, debated, debates, debating	debate
decade	*decades*	decade
decline	declined, declines, declining	decline
deduce	deduced, deduces, deducing, *deduction*, deductions	deduce

define	definable, defined, defines, defining, *definition*, definitions, redefine, redefined, redefines, redefining, undefined	define
definite	definitely, definitive, indefinite, indefinitely	definite
demonstrate	demonstrable, demonstrably, demonstrated, demonstrates, demonstrating, demonstration, demonstrations, demonstrative, demonstratively, demonstrator, demonstrators	demonstrate
denote	denotation, denotations, denoted, denotes, denoting	denote
deny	deniable, denial, denials, denied, denies, denying, undeniable	deny
depress	depressed, depresses, depressing, *depression*	depress
derive	derivation, derivations, derivative, derivatives, *derived*, derives, deriving	derive
design	designed, designer, designers, designing, designs	design
despite		despite
detect	detectable, *detected*, detecting, detection, detective, detectives, detector, detectors, detects	detect
deviate	deviated, deviates, deviating, *deviation*, deviations	deviate
device	devices	device
devote	*devoted*, devotedly, devotes, devoting, devotion, devotions	devote
differentiate	differentiated, differentiates, differentiating, *differentiation*	differentiate
dimension	dimensional, *dimensions,* multidimensional	dimension
diminish	*diminished*, diminishes, diminishing, diminution, undiminished	diminish
discrete	discretely, *discretion,* discretionary, indiscrete, indiscretion	discrete
discriminate	discriminated, discriminates, discriminating, *discrimination*	discriminate
displace	displaced, *displacement*, displaces, displacing	displace
display	displayed, displaying, displays	display
dispose	disposable, *disposal,* disposed, disposes, disposing	dispose
distinct	*distinction*, distinctions, distinctive, distinctively, distinctly, indistinct, indistinctly	distinct
distort	*distorted*, distorting*,* distortion, distortions, distorts	distort
distribute	distributed, distributing, *distribution,* distributional, distributions, distributive, distributor, distributors, redistribute, redistributed, redistributes, redistributing, redistribution	distribute
diverse	diversely, diversification, diversified, diversifies, diversify,	diverse

	diversifying, *diversity*	
document	documentation, documented, documenting, documents	document
domain	domains	domain
domestic	domestically, domesticate, domesticated, domesticating, domestics	domestic
dominate	dominance, *dominant*, dominated, dominates, dominating, domination	dominate
draft	drafted, drafting, drafts, redraft, redrafted, redrafting, redrafts	draft
drama	dramas, *dramatic*, dramatically, dramatize, dramatized, dramatizing, dramatizes, dramatization, dramatizations, dramatist, dramatists, dramatization, dramatizations, dramatizing	drama
duration		duration
dynamic	dynamically, dynamics	dynamic
economy	*economic*, economical, economically, economics, economies, economist, economists, uneconomical	economy
edit	edited, editing, *edition,* editions, editor, editorial, editorials, editors, edits	edit
element	*elements*	element
eliminate	eliminated, eliminates, eliminating, elimination	eliminate
emerge	*emerged,* emergence, emergent, emerges, emerging	emerge
emphasis	emphasize, emphasized, emphasizing, emphatic, emphatically	emphasis
empirical	empirically, empiricism	empirical
enable	enabled, enables, enabling	enable
encounter	*encountered,* encountering, encounters	encounter
energy	energetic, energetically, energies	energy
enforce	enforced, *enforcement,* enforces, enforcing	enforce
enhance	*enhanced,* enhancement, enhances, enhancing	enhance
enormous	enormity, enormously	enormous
ensure	ensured, ensures, ensuring	ensure
entity	*entities*	entity
environment	environmental, environmentalist, environmentalists, environmentally, environments	environment
equate	equated, equates, equating, *equation*, equations	equate
equip	*equipment,* equipped, equipping, equips	equip
equivalent	equivalence	equivalent

erode	eroded, erodes, eroding, *erosion*	erode
error	erroneous, erroneously, errors	error
establish	disestablish, disestablished, disestablishes, disestablishing, disestablishment, *established*, establishes, establishing, establishment, establishments	establish
estate	estates	estate
estimate	estimated, estimates, estimating, estimation, estimations, over-estimate, overestimate, overestimated, overestimates, overestimating, underestimate, underestimated, underestimates, underestimating	estimate
ethic	*ethical*, ethically, ethics, unethical	ethic
ethnic	ethnicity	ethnic
evaluate	evaluated, evaluates, evaluating, *evaluation,* evaluations, evaluative, re-evaluate, re-evaluated, re-evaluates, re-evaluating, re-evaluation	evaluate
eventual	eventuality, *eventually*	eventual
evident	evidenced, *evidence*, evidential, evidently	evident
evolve	*evolution*, evolved, evolving, evolves, evolutionary, evolutionist, evolutionists	evolve
exceed	exceeded, exceeding, exceeds	exceed
exclude	*excluded*, excludes, excluding, exclusion, exclusionary, exclusionist, exclusions, exclusive, exclusively	exclude
exhibit	exhibited, exhibiting, exhibition, exhibitions, exhibits	exhibit
expand	expanded, expanding, expands, *expansion,* expansionism, expansive	expand
expert	expertise, expertly, experts	expert
explicit	explicitly	explicit
exploit	*exploitation,* exploited, exploiting, exploits	exploit
export	exported, exporter, exporters, exporting, exports	export
expose	exposed, exposes, exposing, *exposure,* exposures	expose
external	externalization, externalize, externalized, externalizes, externalizing, externality	external
extract	extracted, extracting, extraction, extracts	extract
facilitate	facilitated, facilitates, facilities, facilitating, facilitation, facilitator, facilitators, facility	facilitate
factor	factored, factoring, *factors*	factor
feature	featured, *features,* featuring	feature
federal	federation, federations	federal

fee	*fees*	fee
file	filed, files, filing	file
final	finalize, finalized, finalizes, finalizing, finality, finally, finals	final
finance	financed, finances, *financial*, financially, financier, financiers, financing	finance
finite	infinite, infinitely	finite
flexible	*flexibility,* inflexible, inflexibility	flexible
fluctuate	fluctuated, fluctuates, fluctuating, fluctuation, *fluctuations*	fluctuate
focus	focused, focuses, focusing, refocus, refocused, refocuses, refocusing	focus
format	formatted, formatting, formats	format
formula	formulae, formulas, formulate, formulated, formulating, formulation, formulations, reformulate, reformulated, reformulating, reformulation, reformulations	formula
forthcoming		forthcoming
found	*founded*, founder, founders, founding, unfounded	found
foundation	foundations	foundation
framework	frameworks	framework
function	functional, functionally, functioned, functioning, functions	function
fund	funded, funder, funders, funding, *funds*	fund
fundamental	fundamentally	fundamental
furthermore		furthermore
gender	genders	gender
generate	*generated,* generates, generating	generate
generation	generations	generation
globe	*global*, globally, globalization, globalization	globe
goal	*goals*	goal
grade	graded, grades, grading	grade
grant	*granted*, granting, grants	grant
guarantee	guaranteed, guaranteeing, guarantees	guarantee
guideline	*guidelines*	guideline
hence		hence
hierarchy	*hierarchical,* hierarchies	hierarchy
highlight	*highlighted,* highlighting, highlights	highlight
hypothesis	hypotheses, hypothesize, hypothesized, hypothesizes,	hypothesis

	hypothesizing, hypothetical, hypothetically	
identical	identically	identical
identify	identifiable, identification, *identified*, identifies, identifying, identities, identity, unidentifiable	identify
ideology	ideological, ideologically, ideologies	ideology
ignorant	ignorance, ignore, *ignored,* ignores, ignoring	ignorant
illustrate	*illustrated*, illustrates, illustrating, illustration, illustrations, illustrative	illustrate
image	imagery, images	image
immigrate	immigrant, immigrants, immigrated, immigrates, immigrating, *immigration*	immigrate
impact	impacted, impacting, impacts	impact
implement	*implementation*, implemented, implementing, implements	implement
implicate	implicated, implicates, implicating, implication, *implications*	implicate
implicit	implicitly	implicit
imply	implied, *implies*, implying	imply
impose	*imposed*, imposes, imposing, imposition	impose
incentive	incentives	incentive
incidence	incident*,* incidentally, incidents	incidence
incline	*inclination*, inclinations, inclined, inclines, inclining	incline
income	incomes	income
incorporate	*incorporated,* incorporates, incorporating, incorporation	incorporate
index	indexed, indexes, indexing	index
indicate	indicated, indicates, indicating, indication, indications, indicative, indicator, indicators	indicate
individual	individualized, individuality, individualism, individualist, individualists, individualistic, individually, individuals	individual
induce	*induced*, induces, inducing, induction	induce
inevitable	inevitability, *inevitably*	inevitable
infer	inference, inferences, *inferred,* inferring, infers	infer
infrastructure	infrastructures	infrastructure
inherent	inherently	inherent
inhibit	inhibited, inhibiting, *inhibition,* inhibitions, inhibits	inhibit
initial	initially	initial
initiate	initiated, initiates, initiating, initiation, initiations, initiative, *initiatives*, initiator, initiators	initiate

injure	injured, injures, injuries, injuring, *injury*, uninjured	injure
innovate	*innovation*, innovated, innovates, innovating, innovations, innovative, innovator, innovators	innovate
input	inputs	input
insert	inserted, inserting, insertion, inserts	insert
insight	insightful, *insights*	insight
inspect	inspected, inspecting, *inspection,* inspections, inspector, inspectors, inspects	inspect
instance	instances	instance
institute	instituted, institutes, instituting, institution, institutional, institutionalize, institutionalized, institutionalizes, institutionalizing, institutionally, institutions	institute
instruct	instruction, instructed, instructing, *instructions,* instructive, instructor, instructors, instructs	instruct
integral		integral
integrate	integrated, integrates, integrating, *integration*	integrate
integrity		integrity
intelligent	*intelligence*, intelligently, unintelligent	intelligent
intense	intensely, intenseness, intensification, intensified, intensifies, intensify, intensifying, intension, *intensity*, intensive, intensively	intense
interact	interacted, interacting, *interaction*, interactions, interactive, interactively, interacts	interact
intermediate		intermediate
internal	internalize, internalized, internalizes, internalizing, internally	internal
interpret	*interpretation*, interpretations, interpretative, interpreted, interpreting, interpretive, interprets, misinterpret, misinterpretation, misinterpretations, misinterpreted, misinterpreting, misinterprets, reinterpret, reinterpreted, reinterprets, reinterpreting, reinterpretation, reinterpretations	interpret
interval	intervals	interval
intervene	intervened, intervenes, intervening, *intervention,* interventions	intervene
intrinsic	intrinsically	intrinsic
invest	invested, investing, *investment*, investments, investor, investors, invests, reinvest, reinvested, reinvesting, reinvestment, reinvests	invest
investigate	investigated, investigates, investigating, *investigation,*	investigate

	investigations, investigative, investigator, investigators	
invoke	*invoked*, invokes, invoking	invoke
involve	*involved*, involvement, involves, involving, uninvolved	involve
isolate	*isolated,* isolates, isolating, isolation, isolationism	isolate
issue	issued, *issues*, issuing	issue
item	itemization, itemize, itemized, itemizes, itemizing, *items*	item
job	jobs	job
journal	journals	journal
justify	justifiable, justifiably, *justification*, justifications, justified, justifies, justifying, unjustified	justify
label	labeled, labeling, labels	label
labor	labored, laboring, labors	labor
layer	layered, layering, layers	layer
lecture	lectured, lecturer, lecturers, lectures, lecturing	lecture
legal	illegal, illegality, illegally, legality, legally	legal
legislate	legislated, legislates, legislating, *legislation*, legislative, legislator, legislators, legislature	legislate
levy	levies	levy
liberal	liberalize*,* liberalism, liberalization, liberalized, liberalizes, liberalizing, liberalization, liberate, liberated, liberates, liberation, liberations, liberating, liberator, liberators, liberally, liberals	liberal
license	licenses, license, licensed, licensing, licenses, unlicensed	license
likewise		likewise
link	linkage, linkages, linked, linking, links	link
locate	located, locating, *location*, locations, relocate, relocated, relocates, relocating, relocation	locate
logic	illogical, illogically, logical, logically, logician, logicians	logic
maintain	maintained, maintaining, maintains, *maintenance*	maintain
major	majorities, majority	major
manipulate	manipulated, manipulates, manipulating, *manipulation,* manipulations, manipulative	manipulate
manual	manually, manuals	manual
margin	*marginal,* marginally, margins	margin
mature	immature, immaturity, maturation, maturational, matured, matures, maturing, maturity	mature
maximize	max, maximized, maximizes, maximizing, maximization,	maximize

	maximum	
mechanism	mechanisms	mechanism
media		media
mediate	mediated, mediates, mediating, *mediation*	mediate
medical	medically	medical
medium		medium
mental	mentality, mentally	mental
method	methodical, methodological, methodologies, methodology, methods	method
migrate	migrant, migrants, migrated, migrates, migrating, *migration,* migrations, migratory	migrate
military		military
minimal	mineralization, minimalize, minimalizes, minimalized, minimalizing, minimalist, minimalists, minimalistic, minimally	minimal
minimize	*minimized,* minimizes, minimizing	minimize
minimum		minimum
ministry	ministered, ministering, ministerial, ministries	ministry
minor	*minorities,* minority, minors	minor
mode	modes	mode
modify	modification, modifications, *modified,* modifies, modifying, unmodified	modify
monitor	monitored, *monitoring,* monitors, unmonitored	monitor
motive	motivate, motivated, motivates, motivating, *motivation,* motivations, motives, unmotivated	motive
mutual	mutually	mutual
negate	*negative,* negated, negates, negating, negatively, negatives	negate
network	networked, networking, networks	network
neutral	neutralization, neutralize, neutralized, neutralizes, neutralizing, neutrality	neutral
nevertheless		nevertheless
nonetheless		nonetheless
norm	*norms*	norm
normal	abnormal, abnormally, normalization, normalize, normalized, normalizes, normalizing, normality, normally	normal
notion	notions	notion
notwithstanding		notwithstanding

nuclear		nuclear
objective	objectively, objectivity	objective
obtain	obtainable, *obtained*, obtaining, obtains, unobtainable	obtain
obvious	obviously	obvious
occupy	occupancy, occupant, occupants, occupation, *occupational,* occupations, occupied, occupier, occupiers, occupies, occupying	occupy
occur	occurred, occurrence, occurrences, occurring, occurs, reoccur, reoccurred, reoccurring, reoccurs	occur
odd	odds	odd
offset	offsets, offsetting	offset
ongoing		ongoing
option	optional, options	option
orient	orientate*,* orientated*,* orientates, *orientation,* orientating, oriented, orienting, orients, reorient, reorientation	orient
outcome	*outcomes*	outcome
output	outputs	output
overall		overall
overlap	overlapped, overlapping, overlaps	overlap
overseas		overseas
panel	paneled, paneling, panels	panel
paradigm	paradigms	paradigm
paragraph	paragraphing, paragraphs	paragraph
parallel	paralleled, parallels, unparalleled	parallel
parameter	*parameters*	parameter
participate	participant, participants, participated, participates, participating, *participation*, participatory	participate
partner	partners, *partnership*, partnerships	partner
passive	passively, passivity	passive
perceive	*perceived,* perceives, perceiving, perception, perceptions	perceive
percent	percentage, percentages	percent
period	periodic, periodical, periodically, periodicals, periods	period
persist	persisted, persistence, *persistent*, persistently, persisting, persists	persist
perspective	perspectives	perspective
phase	phased, phases, phasing	phase

phenomenon	phenomena, phenomenal	phenomenon
philosophy	philosopher, philosophers, philosophical, philosophically, philosophies, philosophize, philosophized, philosophizes, philosophizing	philosophy
physical	physically	physical
plus	pluses	plus
policy	policies	policy
portion	portions	portion
pose	*posed*, poses, posing	pose
positive	positively	positive
potential	potentially	potential
practitioner	*practitioners*	practitioner
precede	preceded, precedence, precedent, precedes, *preceding,* unprecedented	precede
precise	imprecise, precisely, precision	precise
predict	predictability, predictable, predictably, *predicted*, predicting, prediction, predictions, predicts, unpredictability, unpredictable	predict
predominant	predominance, *predominantly*, predominate, predominated, predominates, predominating	predominant
preliminary	preliminaries	preliminary
presume	presumably, presumed, presumes, presuming, *presumption,* presumptions, presumptuous	presume
previous	previously	previous
primary	primarily	primary
prime	primacy	prime
principal	principally	principal
principle	principled, principles, unprincipled	principle
prior		prior
priority	priorities, prioritization, prioritize, prioritized, prioritizes, prioritizing	priority
proceed	procedural, *procedure,* procedures, proceeded, proceeding, proceedings, proceeds	proceed
process	processed, processes, processing	process
professional	professionally, professionals, professionalism	professional
prohibit	*prohibited,* prohibiting, prohibition, prohibitions, prohibitive, prohibits	prohibit
project	projected, projecting, projection, projections, projects	project

promote	promoted, promoter, promoters, promotes, promoting, promotion, promotions	promote
proportion	disproportion, disproportionate, disproportionately, proportional, proportionally, proportionate, proportionately, proportions	proportion
prospect	prospective, prospects	prospect
protocol	protocols	protocol
psychology	psychological, psychologically, psychologist, psychologists	psychology
publication	publications	publication
publish	*published,* publisher, publishers, publishes, publishing, unpublished	publish
purchase	purchased, purchaser, purchasers, purchases, purchasing	purchase
pursue	pursued, pursues, pursuing, pursuit, pursuits	pursue
qualitative	qualitatively	qualitative
quote	*quotation,* quotations, quoted, quotes, quoting	quote
radical	radically, radicals	radical
random	randomly, randomness	random
range	ranged, ranges, ranging	range
ratio	ratios	ratio
rational	irrational, rationalization, rationalizations, rationalize, rationalized, rationalizes, rationalizing, rationalism, rationality, rationally	rational
react	reacted, reacts, reacting, *reaction*, reactionaries, reactionary, reactions, reactive, reactivate, reactivation, reactor, reactors	react
recover	recoverable, recovered, recovering, recovers, *recovery*	recover
refine	refined, refinement, refinements, refines, refining	refine
regime	regimes	regime
region	regional, regionally, regions	region
register	deregister, deregistered, deregistering, deregisters, deregistration, *registered,* registering, registers, registration	register
regulate	deregulated, deregulates, deregulating, deregulation, regulated, regulates, regulating, regulation, regulations, regulator, regulators, regulatory, unregulated	regulate
reinforce	*reinforced*, reinforcement, reinforcements, reinforces, reinforcing	reinforce
reject	*rejected,* rejecting, rejection, rejects, rejections	reject

relax	relaxation, *relaxed*, relaxes, relaxing	relax
release	released, releases, releasing	release
relevant	irrelevance, irrelevant, relevance	relevant
reluctance	*reluctant*, reluctantly	reluctance
rely	reliability, reliable, reliably, *reliance*, reliant, relied, relies, relying, unreliable	rely
remove	removable, removal, removals, *removed*, removes, removing	remove
require	*required*, requirement, requirements, requires, requiring	require
research	researched, researcher, researchers, researches, researching	research
reside	resided, residence, *resident*, residential, residents, resides, residing	reside
resolve	*resolution,* resolved, resolves, resolving, unresolved	resolve
resource	resourced, resourceful, *resources*, resourcing, unresourceful, under-resourced	resource
respond	responded, respondent, respondents, responding, responds, *response*, responses, responsive, responsiveness, unresponsive	respond
restore	restoration, restored, restores, restoring	restore
restrain	restrained, restraining, restrains, restraint, *restraints*, unrestrained	restrain
restrict	*restricted,* restricting, restriction, restrictions, restrictive, restrictively, restricts, unrestricted, unrestrictive	restrict
retain	*retained*, retaining, retainer, retainers, retains, retention, retentive	retain
reveal	*revealed,* revealing, reveals, revelation, revelations	reveal
revenue	revenues	revenue
reverse	reversal, reversed, reverses, reversible, reversing, reversals, irreversible	reverse
revise	revised, revises, revising, *revision*, revisions	revise
revolution	revolutionary, revolutionaries, revolutionize, revolutionized, revolutionizes, revolutionizing, revolutionist, revolutionists, revolutions	revolution
rigid	rigidities, rigidity, rigidly	rigid
role	roles	role
route	routed, routes, routing	route
scenario	scenarios	scenario
schedule	reschedule, rescheduled, reschedules, rescheduling, scheduled, schedules, scheduling, unscheduled	schedule

scheme	schematic, schematically, schemed, schemes, scheming	scheme
scope		scope
section	sectioned, sectioning, sections	section
sector	sectors	sector
secure	insecure, insecurities, insecurity, secured, securely, secures, securing, securities, *security*	secure
seek	seeking, seeks, *sought*	seek
select	selected, selecting, selection, selections, selective, selectively, selector, selectors, selects	select
sequence	sequenced, sequences, sequencing, sequential, sequentially	sequence
series		series
sex	sexes, sexism, sexual, sexuality, sexually	sex
shift	shifted, shifting, shifts	shift
significant	insignificant, insignificantly, significance, significantly, signified, signifies, signify, signifying	significant
similar	dissimilar, similarities, similarity, similarly	similar
simulate	simulated, simulates, simulating, *simulation*	simulate
site	sites	site
so-called		so-called
sole	*solely*	sole
somewhat		somewhat
source	sourced, sources, sourcing	source
specific	specifically, specification, specifications, specificity, specifics	specific
specify	specifiable, *specified,* specifies, specifying, unspecified	specify
sphere	spheres, spherical, spherically	sphere
stable	instability, stabilization, stabilize, stabilized, stabilizes, stabilizing, *stability,* unstable	stable
statistic	statistician, statisticians, statistical, statistically, *statistics*	statistic
status		status
straightforward		straightforward
strategy	strategic, *strategies*, strategically, strategist, strategists	strategy
stress	stressed, stresses, stressful, stressing, unstressed	stress
structure	restructure, restructured, restructures, restructuring, structural, structurally, structured, structures, structuring, unstructured	structure
style	styled, *styles,* styling, stylish, stylize, stylized, stylizes,	style

	stylizing	
submit	submission, submissions, submits, *submitted,* submitting	submit
subordinate	subordinates, subordination	subordinate
subsequent	subsequently	subsequent
subsidy	*subsidiary,* subsidies, subsidize, subsidized, subsidizes, subsidizing	subsidy
substitute	substituted, substitutes, substituting, *substitution*	substitute
successor	succession, successions, *successive,* successively, successors	successor
sufficient	sufficiency, insufficient, insufficiently, sufficiently	sufficient
sum	summation, summed, summing, sums	sum
summary	summaries, summarize, summarized, summarizes, summarizing, summarization, summarizations	summary
supplement	*supplementary,* supplemented, supplementing, supplements	supplement
survey	surveyed, surveying, surveys	survey
survive	survival, survived, survives, surviving, survivor, survivors	survive
suspend	*suspended*, suspending, suspends, suspension	suspend
sustain	*sustainable*, sustainability, sustained, sustaining, sustains, sustenance, unsustainable	sustain
symbol	*symbolic,* symbolically, symbolize, symbolizes, symbolized, symbolizing, symbolism, symbols	symbol
tape	taped, *tapes,* taping	tape
target	targeted, targeting, targets	target
task	tasks	task
team	teamed, teaming, teams	team
technical	technically	technical
technique	*techniques*	technique
technology	technological, technologically	technology
temporary	temporarily	temporary
tense	*tension*, tensely, tenser, tensest, tensions	tense
terminate	terminal, terminals, terminated, terminates, terminating, *termination*, terminations	terminate
text	texts, textual	text
theme	themes, thematic, thematically	theme
theory	theoretical, theoretically, theories, theorist, theorists	theory
thereby		thereby

thesis	theses	thesis
topic	topical, topics	topic
trace	traceable, traced, traces, tracing	trace
tradition	non-traditional, *traditional*, traditionalist, traditionally, traditions	tradition
transfer	transferable, transference, transferred, transferring, transfers	transfer
transform	*transformation,* transformations, transformed, transforming, transforms	transform
transit	transited, transiting, *transition,* transitional, transitions, transitory, transits	transit
transmit	*transmission,* transmissions, transmitted, transmitting, transmits	transmit
transport	transportation, transported, transporter, transporters, transporting, transports	transport
trend	trends	trend
trigger	triggered, triggering, triggers	trigger
ultimate	*ultimately*	ultimate
undergo	undergoes, undergoing, undergone, underwent	undergo
underlie	underlay, underlies, *underlying*	underlie
undertake	*undertaken,* undertakes, undertaking, undertook	undertake
uniform	uniformity, uniformly	uniform
unify	unification, *unified*, unifies, unifying	unify
unique	uniquely, uniqueness	unique
utilize	utilization, utilized, utilizes, utilizing, utilizer, utilizers, *utility,* utilities	utilize
valid	invalidate, invalidity, validate, validated, validating, validation, *validity*, validly	valid
vary	invariable, invariably, variability, variable, *variables,* variably, variance, variant, variants, variation, variations, varied, varies, varying	vary
vehicle	vehicles	vehicle
version	versions	version
via		via
violate	violated, violates, violating, *violation*, violations	violate
virtual	*virtually*	virtual
visible	visibility, visibly, invisible, invisibility	visible
vision	visions	vision

visual	visualize, visualized, visualized, visualizing, visualization, visually	visual
volume	volumes, vol	volume
voluntary	voluntarily, volunteer, volunteering, volunteered, volunteers	voluntary
welfare		welfare
whereas		whereas
whereby		whereby
widespread		widespread

Sublist 1 of the Academic Word List - Most Frequent Words in Families
This sublist contains the most frequent words of the Academic Word List in the Academic Corpus.

analysis	*percent*
approach	*period*
area	*policy*
assessment	*principle*
assume	*procedure*
authority	*process*
available	*required*
benefit	*research*
concept	*response*
consistent	*role*
constitutional	*section*
context	*sector*
contract	*significant*
create	*similar*
data	*source*
definition	*specific*
derived	*structure*
distribution	*theory*
economic	*variable*
environment	
established	
estimate	
evidence	
export	
factors	
financial	
formula	
function	
identified	
income	
indicate	
individual	
interpretation	
involved	
issues	
labour	
legal	
legislation	
major	
method	
occur	

Sublist 2 of Academic Word List - Most Frequent Words in Families

This sublist contains the second most frequent words in the Academic Word List from the Academic Corpus.

achieve	*institute*
acquisition	*investment*
administration	*items*
affect	*journal*
appropriate	*maintenance*
aspects	*normal*
assistance	*obtained*
categories	*participation*
chapter	*perceived*
commission	*positive*
community	*potential*
complex	*previous*
computer	*primary*
conclusion	*purchase*
conduct	*range*
consequences	*region*
construction	*regulations*
consumer	*relevant*
credit	*resident*
cultural	*resources*
design	*restricted*
distinction	*security*
elements	*sought*
equation	*select*
evaluation	*site*
features	*strategies*
final	*survey*
focus	*text*
impact	*traditional*
injury	*transfer*

Sublist 3 of Academic Word List - Most Frequent Words in Families

This sublist contains the third most frequent words of the Academic Word List in the Academic Corpus.

alternative	*interaction*
circumstances	*justification*
comments	*layer*
compensation	*link*
components	*location*
consent	*maximum*
considerable	*minorities*
constant	*negative*
constraints	*outcomes*
contribution	*partnership*
convention	*philosophy*
coordination	*physical*
core	*proportion*
corporate	*published*
corresponding	*reaction*
criteria	*registered*
deduction	*reliance*
demonstrate	*removed*
document	*scheme*
dominant	*sequence*
emphasis	*sex*
ensure	*shift*
excluded	*specified*
framework	*sufficient*
funds	*task*
illustrated	*technical*
immigration	*techniques*
implies	*technology*
initial	*validity*
instance	*volume*

Sublist 4 of Academic Word List - Most Frequent Words in Families
This sublist contains the fourth most frequent words of the Academic Word List in the Academic Corpus.

access	parameters
adequate	phase
annual	predicted
apparent	principal
approximated	prior
attitudes	professional
attributed	project
civil	promote
code	regime
commitment	resolution
communication	retained
concentration	series
conference	statistics
contrast	status
cycle	stress
debate	subsequent
despite	sum
dimensions	summary
domestic	undertaken
emerged	
error	
ethnic	
goals	
granted	
hence	
hypothesis	
implementation	
implications	
imposed	
integration	
internal	
investigation	
job	
label	
mechanism	
obvious	
occupational	
option	
output	
overall	
parallel	

Sublist 5 of Academic Word List - Most Frequent Words in Families

academic
adjustment
alter
amendment
aware
capacity
challenge
clause
compounds
conflict
consultation
contact
decline
discretion
draft
enable
energy
enforcement
entities
equivalent
evolution
expansion
exposure
external
facilitate
fundamental
generated
generation
image
liberal
licence
logic
marginal
medical
mental
modified
monitoring
network
notion
objective
orientation
perspective
precise
prime
psychology
pursue
ratio

rejected
revenue
stability
styles
substitution
sustainable
symbolic
target
transition
trend
version
welfare
whereas

Sublist 6 of Academic Word List - Most Frequent Words in Families

abstract	*incidence*
accurate	*incorporated*
acknowledged	*index*
aggregate	*inhibition*
allocation	*initiatives*
assigned	*input*
attached	*instructions*
author	*intelligence*
bond	*interval*
brief	*lecture*
capable	*migration*
cited	*minimum*
cooperative	*ministry*
discrimination	*motivation*
display	*neutral*
diversity	*nevertheless*
domain	*overseas*
edition	*preceding*
enhanced	*presumption*
estate	*rational*
exceed	*recovery*
expert	*revealed*
explicit	*scope*
federal	*subsidiary*
fees	*tapes*
flexibility	*trace*
furthermore	*transformation*
gender	*transport*
ignored	*underlying*
incentive	*utility*

Sublist 7 of Academic Word List - Most Frequent Words in Families

adaptation
adults
advocate
aid
channel
chemical
classical
comprehensive
comprise
confirmed
contrary
converted
couple
decades
definite
deny
differentiation
disposal
dynamic
eliminate
empirical
equipment
extract
file
finite
foundation
global
grade
guarantee
hierarchical
identical
ideology
inferred
innovation
insert
intervention
isolated
media
mode
paradigm
phenomenon
priority
prohibited
publication
quotation
release
reverse

simulation
solely
somewhat
submitted
successive
survive
thesis
topic
transmission
ultimately
unique
visible
voluntary

Sublist 8 of Academic Word List - Most Frequent Words in Families

abandon
accompanied
accumulation
ambiguous
appendix
appreciation
arbitrary
automatically
bias
chart
clarity
conformity
commodity
complement
contemporary
contradiction
crucial
currency
denote
detected
deviation
displacement
dramatic
eventually
exhibit
exploitation
fluctuations
guidelines
highlighted
implicit
induced
inevitably
infrastructure
inspection
intensity
manipulation
minimised
nuclear
offset
paragraph
plus
practitioners
predominantly
prospect
radical
random
reinforced

restore
revision
schedule
tension
termination
theme
thereby
uniform
vehicle
via
virtually
widespread
visual

Sublist 9 of Academic Word List - Most Frequent Words in Families

accommodation	rigid
analogous	route
anticipated	scenario
assurance	sphere
attained	subordinate
behalf	supplementary
bulk	suspended
ceases	team
coherence	temporary
coincide	trigger
commenced	unified
incompatible	violation
concurrent	vision
confined	
controversy	
conversely	
device	
devoted	
diminished	
distortion	
duration	
erosion	
ethical	
format	
founded	
inherent	
insights	
integral	
intermediate	
manual	
mature	
mediation	
medium	
military	
minimal	
mutual	
norms	
overlap	
passive	
portion	
preliminary	
protocol	
qualitative	
refine	
relaxed	
restraints	
revolution	

Sublist 10 of the Academic Word List - Most Frequent Words in Families

This sublist contains the least frequent words of the Academic Word List in the Academic Corpus.

adjacent
albeit
assembly
collapse
colleagues
compiled
conceived
convinced
depression
encountered
enormous
forthcoming
inclination
integrity
intrinsic
invoked
levy
likewise
nonetheless
notwithstanding
odd
ongoing
panel
persistent
posed
reluctant
so-called
straightforward
undergo
whereby

Science & Technology Wordlist

Science & Technology AWL

aboard, above-described, absorbed, absorption, ac, accelerate, accelerated, accelerators, acceptor, acceptor-impurity, accomplish, accomplished, accomplishing, acoustic, acoustical, acoustics, activate, activated, actuated, actuating, acute, ad, adder, advantageous, advent, adverse, agitation, airborne, air-circuit, aircraft, air-type, algebraic, align, aligned, aligning, alkali, alleviated, allotted, alloy, alloys, alternately, alternates, alternating-current, alternation, alternator, alternators, altitude, aluminum, aluminum-clad, amateur, ammeter, amp, amperage, ampere, amperes, amplification, amplified, amplifier, amplifiers, amplifies, amplify, amplifying, amplitude, amplitude-modulated, amplitudes, analogue, anatomy, announced, anode, anodes, anomalous, antenna, antennas, antimony, aperture, apparatus, appliances, arc, architectural, arithmetic, arithmetical, armature, armatures, array, arsenic, arthritis, ascertained, astronauts, atmosphere, atmospheres, atmospheric, atom, atomic, atoms, attenuated, attenuation, audible, audio, audio-frequency, audiometer, auxiliary, axis

backup, bands-short-wave, bandwidth, bandwidths, batteries, battery, battery-powered, benzene, billionths, binary, biologist, bismuth, black-and-white, blackouts, blank, blanking, blast, blend, blends, blurred, bob, bombardment, boosting, brakes, breakdown, breaker, breakers, bridged, brilliant, broadcast-band, broadcasters, brownout, bubble, buffers, bypassed

cable, cables, calculus, calibrated, calibration, cancel, candles, capacitance, capacitance-coupled, capacitances, capacitor, capacitors, capture, captured, carbon, car-ignition, carrier, carriers, cassette, cathode, cathode-ray, cell, cells, cellular, centimeter, ceramic, chemistry, chrominance, cinemas, circuit, circuitry, circuits, circulates, circulating, circumventing, clad, clapper, clef, closed-circuit, close-up, clues, clumsy, cluster, clusters, clutches, cm, coated, coating, coaxial, cohered, coil, coils, commercial-radio, commonplace, compact, compass, composers, compound-wound, compression, compressions, compromise, concentric, condenser, condensers, conduction, conductive, conductivity, conductor, conductors, cone, consoles, consonance, continental, continually, continuous-wave, converter, converters, copper-clad, coulomb, counter, counteract, crests, crucible, crude, crystal, crystalline, crystals, Curie, current-carrying, currents, curvature, cutter, cyclotrons, cylinder, cylinders, cylindrical

damping, darkens, dashes, dB, DC, decelerating, decibel, decibels, decode, decoded, decoder, decodes, decreed, deficiencies, deficiency, deflected, deflecting, deflection, deflects, deliberate, demagnetize, demagnetized, demodulated, demodulating, demodulation, denominator, density, dependence, deposited, deposits, devised, diagnostic, diagonal, diagram, diagrams, dials, diamagnetic, diameter, diamond-cubic, diaphragm, diathermy, dielectric, diesel, differential, diffraction, diffuse, digit, digital, digital-computer, digitally, diode, diode-having, diodes, dipole, direct-coupled, direct-current, directional, directivity, direct-satellite, direct-view, disc, discharge, discharged, discourage, discoverer, discriminators, discs, dish-shaped, disks, disproved, disrupted, dissector, dissipate, dissipation, dissonance, distributes, diverging, donor, donor-impurity, dotted, downwind, drawings, droplets, duly, dynamo, dynamoelectric, dynamotor, dynode, dynodes

earphones, echo, echoes, edifice, editing-particularly, efficiencies, efficiently, electrode, electrodes, electrodynamometer, electrodynamometers, electromagnet, electromagnetic, electromagnetism, electromagnets, electromechanical, electromotive, electron, electron-collecting, electronic, electronically, electronics, electrons, electroscope, electrostatic, elementary, emergencies, emission, emits, emitted, emitter, encodes, encoding, end-fed, energized, energizing, engraves, engraving, entailed, entails, enunciated, enveloped, euphonious, evacuated, exacting, executed, exerts, expended

fabricated, facsimile, facsimiles, farad, faraday, fax, feats, fed, feed, feedback, feeding, ferrite, ferromagnetic, fidelity, fig, filament, filaments, filings, filter, filtered, filtering, filters, fixed-pitch, fluid, flux, forerunner, fraction, frequencies, frequency-modulated, friction, fulfilled, fulfils, fun-and-fact, funnel-like, funnel-shaped, fuse, fuses

gallium, galvanometer, galvanometers, gamma, gaseous, geared, generator, generators, geologist, germanium, giant, gigahertz, glow, glowing, graphic, graphically, green-to, grid, grids, grid-system, grip, groove

halftone, halftones, half-wave, half-wavelength, ham, hand-held, harmonic, harmonically, harmonics, harmony, hazard, height, helical, heliograph, helix, heptodes, hertz, hexodes, high-fidelity, high-frequency, high-intensity, high-power, high-quality, high-resolution, high-speed, high-voltage, hiss, historically, homogeneous, horizontal, horseshoe, hot-wire, household, households, hue, hum, humidity, hundred-thousandth, hydroelectric, hydropower

iconoscope, illuminated, illuminates, illumination, imaging, imbalance, imbedded, immersed, impedance, impedance-coupled, impede, imperfect, imperfection, impinge, impinged, impregnated, impressed, impulses, impurities, inasmuch, incandescent, incoming, inconvenient, incurring, indestructible, indiscriminately, indium, inductance, inductance-coupled, inductances, inductive, industrialized, inertia, inextricably, infrared, inoperative, installations, installed, instantaneous, instrumentation, insulated, insulation, insulator, insulators, integer, integrated-circuit, intelligibility, intelligible, intelligibly, intensities, interconnected, interdependent, interestingly, interface, interfaces, interlaced, intermediate-range, internal-combustion, interposed, interrelated, interruption, inverse, inversely, inverse-square, ion, ionosphere, iron-vane

jargon, jean, joule, junction, junctions

keying, khz, kilohertz, kilovolt, kilovolts, kilowatt, kinescope, kinescopes, klystron, klystrons, km

laboratories, laboratory, lag, lambda, laminated, laminations, landings, lapse, large-diameter, large-scale, laser, lattice, latticework, launched, launches, leak, leaked, lee, lens, lenses, levitation, lightning, limiter, line-of-sight, line-see, lodestone, lodge, long-distance, longitudinal, longitudinally, long-range, long-wave, loop, loops, loudspeaker, loudspeakers, lower-voltage, low-frequency, low-speed, low-voltage, luminance, luminescence, luminous, lunar

magazines, magnet, magnetic, magnetism, magnetite, magnetization, magnetize, magnetized, magneto, magnetron, magnetrons, magnets, magnitude, magnitudes, manifests, mapped, mapping, marine, mariner, mars, maser, mask, masking, materials-into, mathematical, mathematician, mathematicians, medium-frequency, medium-wave, megahertz, megaphone, membrane, mercury, mesh, metallic, meter, meters, microcomputer, microphone, microprocessor, microscope, microscopic, microwave, microwaves, millionths, mimic, miniature, miniaturization, mirror, miscellaneous, missions, mixer, mixers, mobile, modulate, modulated, modulating, modulation, modulation-using, modulator, modules, moist, molecular, molecule, molecules, molten, monochrome, moon-landing, mounted, mounting, movable, mover, multimedia, multiples, multiplier, multiplier-which, multistage, mystical

naked, nanometers, naturalness, navigation, negative-feedback, neighboring, nongovernmental, north-seeking, nullify

obsolete, octave, octaves, off-screen, ohm, ohms, old-fashioned, one-half, one-hundredth, one-millionth, one-person, one-third, one-twentieth, online, opaque, openings, opposition, optical, optics, oracle, orbit, orbited, orbiting, organic, organist, originating, orthicon, orthicons, oscillate, oscillates, oscillating, oscillation, oscillations, oscillator, oscillators, oscilloscope, outermost, overloaded, overloads, overtones, overwrite, oxide

paramagnetic, paramagnets, particulars, pastime, patent, patented, paths-one, patronage, peak, pendulum, perceptual, perforated, perforations, permanent-magnet, perpendicular, pertaining, phonograph, phosphor, phosphors, phosphorus, photo, photoconductive, photoelectric, photographic, photolithography, photosensitive, phototubes, physician, physicist, physicists, physics, physiological, piano, pickup, piezoelectric, pioneer, pipe-type, pitch, pivoted, plastic, polar, poles, porcelain,

portable, postulated, postwar, potentialities, potentials, potentiometer, power-generating, power-transmission, predetermined, present-day, printed-circuit, programmable, propagate, propagated, propagation, propagator, proportionality, proximity, pulse, pulse-code, pulses, pulse-time, pylons

quantitative, quantum, quarter-wave, quartz, quartz-crystal, quench

rabbit-ear, radar, radiated, radiates, radiating, radiation, radiator, radio-broadcasting, radio-communication, radio-communications, radio-detectors, radio-frequency, radio-receiving, radiotelegraphy, radiotelephony, radius, ranger, rarefaction, rarefactions, reactance, readouts, reassembled, rebuilt, receivers, reception, receptor, recipes, recombined, reconstitute, recorded-so, recorder, record-player, re-create, re-creates, re-creating, rectification, rectified, rectifier, rectifiers, rectifying, recurring, reference, reflex, refraction, regenerative, relay, relayed, relaying, relays, remote, remote-control, remote-indicating, render, reorienting, repeater, repel, repels, repetition, reproducible, repulsion, repulsion-induction, repulsive, resemble, resembles, resembling, residual, resistances, resistant, resistor, resistors, resonance, resonant, resonates, resultant, resumed, retrace, retranslates, retransmit, retransmits, retrieval, revolved, revolves, revolving, rhombic, rim, rotary, rotate, rotated, rotates, rotating, rotation, rotor, rotors, rudimentary

satellite, satellites, satisfactorily, saturation, scan, scanned, scanner, scanning, scans, scholar, scrambled, scrap, script, sea-bottom, sealed, segments, selectivity, semiconductor, semiconductors, sensations, separator, series-wound, servomechanism, shaft, shellac, short-circuited, short-circuits, short-wave, shunt, shunt-wound, shutdowns, shutter, sidebands, silicon, simultaneously, single-phase, siren, six-year, skip, slits, smearing, soft-iron, software, software-controlled, solenoid, solid-state, sonar, sophisticated, sound-reproducing, soundtrack, sound-wave, southerly, south-seeking, soviet, spacecraft, spark, sparking, spectacular, spectrometers, spectrum, speculation, spiral, spirals, split-phase, spotlights, spurned, square-wave, squirrel-cage, squirrels, stacks, standardization, standardized, static, stationary, stator, step-down, step-up, stethoscope, stimulate, stimulated, stimulates, stimuli, storage, strengths, stroboscope, stroked, studio, stylus, subscribers, substation, substations, subtle, suitably, sunspot, superimposing, superior, superposition, supplanted, suppressed, surge, surged, surveyor, switch, switched, switches, switching, symmetrical, synchronism, synchronization, synchronized, synchronizing, synchronous

tank, taut, technologies, telecasts, telegraphic, telegraphy, telephony, telescopes, televising, television, televisions, tempered, tempo, temporal, termed, thereafter, thermal, thermocouple, three-element, three-phase, thunderstorm, thunderstorms, timbre, timing, tiny, tolerant, tone, tones, toothed, torque, trams, transatlantic, transducer, transformer, transformers, transistor, transistors, translucent, transmission-line, transmitter, transmitters, transparent, transverse, transversely, treble, tremors, tricolor, trillion, triode, triple, troughs, trumpet, tubing, tuner, tuners, turbine, turbines, turntable, turntable-into, two-element, two-junction, two-phase, two-pole, two-thirds, two-to-one

UHF, ultrahigh, ultrasonic, underground, underpins, undersea, understandable, underwater, undesired, unidirectional, unintentional, unpaired, upwind, usable, user-adjustable, utmost

vacuum, vacuum-tube, valence, valence-bond, valve, valves, vane, vanes, vapor, vector, vectors, velocity, verified, versa, vertical, vertically, very-high, very-high-frequency, VHF, vibrate, vibrates, vibrating, vibration, vibrations, vice, video, video-frequency, viewer, violin, violinist, viscosity, volt, voltage, voltages, voltaic, voltmeter, voltmeters, volts

wafers, warmer, wartime, watt, watt-hour, wattmeter, watts, waveform, wavelength, wavelength-designate, wavelengths, weaker, weakest, weather-satellite, weighing-balance, well-designed, wind-excited, windings, wireless, workstations, worldwide, x-ray, x-rays

yoke

zinc