

IELTS vocabulary list: 258 words with meanings

Academic words that come up across IELTS Reading passages, by topic, each with a meaning, its level and a sentence from a passage.

Education

curriculum /kə'rikjələm/ (noun, B2) the subjects and content taught in a school or course

Besides approving textbooks, Monbusho also decides the highly centralised national curriculum and how it is to be delivered.

literacy /'lɪtərəsi/ (noun, B2) the ability to read and write

For three students, even these literacy demands are beyond them.

assess /ə'ses/ (verb, B2) to judge the nature, quality or value of something

"The way telecoms salespeople work is through personal and frequent contact with clients, using the benefit of experience to assess a situation and reach a decision.

attainment /ə'teɪnmənt/ (noun, C1) the level of success reached, especially in school

Japan has a significantly better record in terms of average mathematical attainment than England and Wales.

cognitive /'kɒgnətɪv/ (adjective, C1) connected with thinking, learning and understanding

The concept of intelligence as something innate has been supplanted by the idea that intelligence is not fixed, and that, with the right training, we can be the authors of our own cognitive capabilities.

comprehension /ˌkɒmpri'hensjən/ (noun, B2) the ability to understand something, especially text

Multiple studies show that digital screen use may be causing a variety of troubling downstream effects on reading comprehension in older high school and college students.

gifted /'ɡɪftɪd/ (adjective, B2) having a natural ability or talent

"We didn't find anything other than playing chess that he seems to be supremely gifted at."

undergraduate /ˌʌndə'ɡrædʒuət/ (noun, B2) a university student studying for a first degree

Any undergraduates who have met the academic requirements can sign up for the course in our program in "fire science".

bilingual /ˌbaɪ'lɪŋɡwəl/ (adjective, B2) able to speak two languages well

According to the latest figures, the majority of the world's population is now bilingual or multilingual, having grown up speaking two or more languages.

fluent /'fluːənt/ (adjective, B2) able to speak a language easily and well

With dwindling numbers of Gomera islanders still fluent in the language, Canaries' authorities are taking steps to try to ensure its survival.

peer /pɪə/ (noun, B2) a person of the same age, level or status as you

While teachers are traditionally the MKOs in classrooms, the value of knowledgeable student peers must not go unrecognised either.

Environment

sustainable /sə'steɪnəbl/ (adjective, B2) able to continue without harming the environment

Many scholars think that the compact city, built upwards instead of outwards, integrated with nature (especially water systems), with efficient transport infrastructure, could help modern cities become more efficient and sustainable.

emission /i'mɪʃn/ (noun, B2) gas or other substance sent out into the air

Concrete is the second most used substance in the global economy, after water - and one of the world's biggest single sources of greenhouse gas emissions.

ecosystem /'i:kəsɪstəm/ (noun, B2) all the living things in an area and how they interact

These are complex ecosystems, rich in unique plant and animal life.

habitat /'hæbɪtæt/ (noun, B2) the natural home of an animal or plant

Another threat to the survival of the saiga is loss of habitat, as a result of agricultural expansion and human settlement.

biodiversity /ˌbaɪəvɜːdaɪ'vɜːsəti/ (noun, C1) the variety of plants and animals in an area

"We're seeing huge peatland forests with extremely high biodiversity value being lost for a few decades of oil palm revenues," says Silvius.

conservation /ˌkɒnsə'veɪʃn/ (noun, B2) protecting animals, plants and natural places from harm

"However, we also want to highlight the research and conservation efforts that are now being carried out to try to save them from the threat of global warming."

extinction /ɪk'stɪŋkʃn/ (noun, B2) the end of a species, when none are left alive

It was almost driven to extinction by hunters in the 19th century.

endangered /ɪn'deɪndʒəd/ (adjective, B2) at risk of dying out completely

All three manatee species are endangered or at a heightened risk of extinction.

deforestation /ˌdiːfɒrɪ'steɪʃn/ (noun, B2) cutting down large areas of trees

More specifically, he's interested in how bats are responding to human activity and deforestation in particular.

erosion /ɪ'rəʊʒn/ (noun, B2) gradual wearing away of soil or rock by water or wind

Cutting down native woodland leads to erosion, as there is nothing to keep the soil in place.

drought /draʊt/ (noun, B2) a long period with little or no rain

He believes the huarango was key to the ancient people's diet and, because it could reach deep water sources, it allowed local people to withstand years of drought when their other crops failed.

renewable /rɪ'njuːəbl/ (adjective, B2) (of energy) coming from sources that are not used up

Angel says that his plan is "no substitute for developing renewable energy: the only permanent solution".

greenhouse /'ɡriːnhaʊs/ (adjective, B2) (of gases) trapping heat in the earth's atmosphere

In 1998, energy consumption in the transport sector was to blame for 28% of emissions of CO₂, the leading greenhouse gas.

pollutant /pə'luːtənt/ (noun, C1) a substance that makes air, water or land dirty

The condition appears to result from the cumulative effect of a number of factors, with atmospheric pollutants the principal culprits.

degradation /ˌdeɡrə'deɪʃn/ (noun, C1) the process of becoming worse in condition or quality

Peter Groffman, from the Cary Institute of Ecosystem Studies in New York, points out that soil scientists have been warning about the degradation of the world's soil for decades.

deplete /dɪ'pli:t/ (verb, C1) to reduce something so much that little is left

A great deal of habitat was lost through forest clearance, and introduced species such as deer depleted the remaining forests of food.

species /'spiːʃiːz/ (noun, B2) a group of animals or plants of the same kind

The saiga, a species of antelope native to Central Asia, once roamed the vast grasslands of this region in enormous herds, many millions strong.

predator /'predətə/ (noun, B2) an animal that hunts and eats other animals

The female kakapo has to spend long periods away from the nest searching for food, which leaves the unattended eggs and chicks particularly vulnerable to predators.

climatic /klaɪ'mætɪk/ (adjective, C1) relating to weather conditions over a long period

Petrie believes that archaeologists are in a unique position to investigate how past societies responded to environmental and climatic change.

pesticide /'pestɪsaɪd/ (noun, B2) a chemical used to kill insects that damage crops

Apart from engendering widespread ecological disorders, pesticides have contributed to the emergence of a new breed of chemical-resistant, highly lethal superbugs.

fertiliser /'fɜːtəlaɪzə/ (noun, B2) a substance added to soil to help plants grow

Farmers have been putting this synthetic fertiliser on their fields ever since.

irrigation /ˌɪrɪ'geɪʃn/ (noun, C1) supplying water to crops through channels or pipes

Unprecedented construction of tens of thousands of monumental engineering projects designed to control floods, protect clean water supplies, and provide water for irrigation and hydropower brought great benefits to hundreds of millions of people.

reintroduce /ˌrɪːntrə'djuːs/ (verb, C1) to bring an animal or plant back to an area

The attempt to reintroduce this predator marries well with the aim of bringing forests back to parts of our bare and barren uplands.

mitigate /'mɪtɪgeɪt/ (verb, C1) to make something harmful less serious

This grass growth would reduce temperatures, and mitigate emissions from melting permafrost.

Technology

artificial /ˌɑːtɪ'fɪʃl/ (adjective, B2) made by people rather than existing naturally

Conservationists have put the final touches to a giant artificial reef they have been assembling at the world-renowned Zoological Society of London (London Zoo).

automation /ˌɔːtə'meɪʃn/ (noun, C1) using machines or computers to do work people did

The automotive sector is well used to adapting to automation in manufacturing.

automated /ˌɔːtə'meɪtɪd/ (adjective, B2) operated by machines or computers instead of people

If a significant proportion of the population choose to use shared automated vehicles, mobility demand can be met by far fewer vehicles.

algorithm /'ælɡərɪðəm/ (noun, C1) a set of rules a computer follows to solve a problem

This is the philosophy that, given enough data, machine learning algorithms can solve all of humanity's problems.

innovation /ˌɪnə'veɪʃn/ (noun, B2) a new idea, method or product

Birdseye was responsible for several key innovations that made the frozen food industry possible.

sensor /'sensə/ (noun, B2) a device that detects heat, light, movement or sound

In 2006, they teamed up with technology company Apple to launch Nike+, a digital sports kit comprising a sensor that attaches to the running shoe and a wireless receiver that connects to the user's iPod.

prototype /'prəʊtətaɪp/ (noun, C1) the first version of a machine, built for testing

Though it did not run well, the Doble brothers went on to build a second and third prototype in the following years.

virtual /'vɜːtʃuəl/ (adjective, B2) created by computers to look and feel real

Mobility will change in such potentially significant ways and in association with so many other technological developments, such as telepresence and virtual reality, that it is hard to make concrete predictions about the future.

cutting-edge /ˌkʌtɪŋ 'edʒ/ (adjective, C1) the newest and most advanced

Many believe an entirely new approach to indoor farming is required, employing cutting-edge technologies.

sophisticated /sə'fɪstɪkətɪd/ (adjective, B2) advanced and complicated in design

Shipbuilding today is based on science and ships are built using computers and sophisticated tools.

satellite /'sætələɪt/ (noun, B2) a machine sent into space to travel around the earth

Satellites, rocket shards and collision debris are creating major traffic risks in orbit around the planet.

infrastructure /'ɪnfəstrʌktʃə/ (noun, C1) the basic systems and services something needs to work

AI systems need a lot of data to function, but the public sector typically does not have the appropriate data infrastructure to support advanced machine learning.

Health

infection /ɪn'fekʃn/ (noun, B2) an illness caused by bacteria or a virus

In the future, our ability to manipulate microbes means we could construct buildings with useful microbes built into their walls to fight off infections.

chronic /'krɒnɪk/ (adjective, C1) (of illness) lasting a long time or keeps returning

Further, it has recently been shown that rhesus monkeys kept on caloric-restricted diets for an extended time (nearly 15 years) have less chronic disease.

obesity /ə'sbi:səti/ (noun, B2) being so overweight that it harms your health

And research has found that access to even the most basic green spaces can provide a better quality of life for dementia sufferers and help people avoid obesity.

symptom /'sɪmptəm/ (noun, B2) a sign that someone has an illness

In a study of over 200 patients with Alzheimer's disease, a degenerative brain disease, bilingual patients reported showing initial symptoms of the disease an average of five years later than monolingual patients.

immune /'ɪmjʊ:n/ (adjective, C1) not affected by a disease, poison or chemical

Not to be left behind are the disease-spreading pests, about 100 species of which have become immune to a variety of insecticides now in use.

nutrition /nju'trɪʃn/ (noun, B2) the food you eat and how it affects your health

Improvements in childhood nutrition in the first quarter of the twentieth century, for example, gave today's elderly people a better start in life than their predecessors.

mortality /mɔː'tæləti/ (noun, C1) the number of deaths in a group or period

Macfarlane says: "The infant mortality rate halved in the space of 20 years, and this happened in both rural areas and cities, and across all classes.

epidemic /ˌepɪ'demɪk/ (noun, C1) a disease that spreads quickly to many people, animals or plants

A first epidemic, which occurred in the 1920s, gradually died down, but in the '70s a second epidemic was triggered by shipments of elm from Canada.

outbreak /'aʊtbreɪk/ (noun, B2) the sudden start of a disease or something unpleasant

In 2015, an outbreak of haemorrhagic septicaemia, caused by the normally harmless bacterium Pasteurella multocida, killed over 75% of the global adult saiga population in just three weeks.

antibiotic /ˌæntɪbaɪ'ɒtɪk/ (noun, B2) a medicine that kills bacteria

Our obsession with hygiene, our overuse of antibiotics and our unhealthy, low-fibre diets are disrupting the bacterial balance and may be responsible for soaring rates of allergies and immune problems, such as inflammatory bowel disease (IBD).

pharmaceutical /ˌfɑːmə'suːtɪkl/ (noun, C1) medicines, or the businesses that make them

Pharmaceuticals is one of the most profitable industries in North America.

cardiovascular /ˌkɑːdiəʊ'væskjəl/ (adjective, C1) relating to the heart and blood vessels

When we are exposed to too much noise over the long term, however, those responses can lead to a multitude of health issues, from sleep disturbance to even cardiovascular disease.

respiratory /rə'spɪrətəri/ (adjective, C1) relating to breathing and the lungs

She says families who switch to the smokeless cooking method could expect fewer respiratory diseases.

ailment /'eɪlmənt/ (noun, C1) a minor illness

Cinnamon was also reported to have health benefits, and was thought to cure various ailments, such as indigestion.

prescribe /prɪ'skraɪb/ (verb, C1) (of a doctor) to say what medicine someone should take

In Europe, only orthodox doctors can prescribe herbal medicine.

well-being /ˌwel 'biːɪŋ/ (noun, B2) a state of good health and happiness

"Wetlands directly support the livelihoods and well-being of millions of people," says Dr Matthew McCartney, principal researcher and hydrologist at the International Water Management Institute (IWMI).

anxiety /æŋ'zaɪəti/ (noun, B2) a feeling of worry and nervousness

A tendency to procrastinate is linked to poor mental health, including higher levels of depression and anxiety.

fatigue /fə'tiːg/ (noun, C1) great tiredness of body or mind

Apparently, unpredictable noise produces more fatigue than predictable noise, but it takes a while for this fatigue to take its toll on performance.

expectancy /ɪk'spektənsi/ (noun, C1) (with "life") the number of years someone will probably live

The average captive animal will have a greater life expectancy compared with its wild counterpart, and will not die of drought, of starvation or in the jaws of a predator.

disorder /dɪs'ɔːdə/ (noun, C1) an illness or condition that affects the mind or body

In my previous research, I investigated how observing children at play can give us important clues about their well-being and can even be useful in the diagnosis of neurodevelopmental disorders like autism."

psychological /ˌsaɪkə'lɒdʒɪkl/ (adjective, B2) relating to the mind and feelings

Not only are the physical demands greater than most people could handle, athletes also face intense psychological pressure during competition.

hormone /'hɔːməʊn/ (noun, B2) a chemical made in the body that controls its functions

Our blood pressure goes up, muscles tense and glands release hormones that prepare us for fight or flight.

dementia /dɪ'menʃə/ (noun, C1) a brain illness that causes memory loss, often in old age

Other diseases of old age - dementia, stroke, arteriosclerosis and emphysema - are also troubling fewer and fewer people.

Work and economy

aptitude /'æptɪtjuːd/ (noun, C1) a natural ability to do something well

Each division was organised in exactly the same way, used the same technology, did exactly the same kind of work, and had employees of comparable aptitudes.

manufacture /ˌmænjʊ'fæktʃə/ (noun, B2) the making of goods in large amounts

Corkboard and cork tiles are ideal for thermal and acoustic insulation, while granules of cork are used in the manufacture of concrete.

productivity /ˌprɒdʌk'tɪvəti/ (noun, B2) how much work is done for the time or effort used

When most people think of the costs of procrastination, they think of the toll on productivity.

commodity /kə'mɒdəti/ (noun, C1) a product or raw material that is bought and sold

The world's wetlands are, unfortunately, rich sources for in-demand commodities, such as palm oil and pulpwood.

wage /weɪdʒ/ (noun, B2) money paid for work, usually each week

Factory workers had to work long hours in dangerous conditions for extremely low wages.

incentive /ɪn'sentɪv/ (noun, B2) something that encourages a person to do something

It may sound strange but such payments need to be higher than the existing incentives for farmers to grow food crops.

entrepreneur /ˌɒntreɪprəˈnɜː/ (noun, B2) a person who starts and runs their own business

A Chinese entrepreneur has figured out a way to manufacture 30-story, earthquake-proof skyscrapers that snap together in just 15 days.

workforce /ˈwɜːkfoːs/ (noun, B2) all the people employed in a company, industry or country

In business as a whole, there are a number of factors encouraging the prospect of greater equality in the workforce.

recruitment /rɪˈkruːtmənt/ (noun, C1) finding and employing new staff

Problems of recruitment, remuneration and independence could also arise and this structure would not be appropriate for all companies.

consumer /kənˈsjuːmə/ (noun, B2) a person who buys goods or services

He also introduced the use of cellophane, the first transparent material for food packaging, which allowed consumers to see the quality of the product.

consumption /kənˈsʌmpʃn/ (noun, B2) the eating, drinking or using of something

Two thousand years ago, the inhabitants of South America's Andean mountains had a unique means of conserving potatoes for later consumption.

subsidy /ˈsʌbsədi/ (noun, C1) money a government pays to help an industry or business

In many places - not just the British Caribbean but Cuba and the Philippines too - a powerful sugar bourgeoisie played a major role in politics and their interests were consequently protected by trade barriers and subsidies.

recession /rɪˈseʃn/ (noun, B2) a period when the economy shrinks and trade is poor

In contrast to the many companies that responded to the recession by cutting prices, Coach saw the new consumer mindset as an opportunity for innovation and renewal.

lucrative /ˈluːkrətɪv/ (adjective, C1) producing a lot of money

By 1658, they had permanently expelled the Portuguese from the island, thereby gaining control of the lucrative cinnamon trade.

monopoly /məˈnɒpəli/ (noun, C1) complete control of the trade in a product or service

The Dutch now had a monopoly over the nutmeg trade which would last for another century.

competitive /kəmˈpetətɪv/ (adjective, B2) relating to competing with rivals; better than rivals

As a result, players and their teams are becoming increasingly creative with the modifications to their rackets as they look to maximise their competitive advantage.

executive /ɪgˈzekjətɪv/ (noun, B2) a senior manager in a company

The company itself is based at Imperial College London, although Janssen, its chief executive, still lives in the UAE.

stakeholder /ˈsteɪkhəʊldə/ (noun, C1) a person or group with an interest in a project or business

Others, like Marcel Vernooij and Marcel Beukeboom, suggested that in order to "apply what we already know", all stakeholders, including business, government, scientists and civil society, must work together, starting at the beginning of the value chain.

turnover /ˈtɜːnəʊvə/ (noun, C1) the rate at which staff leave and are replaced

In addition, or maybe as a result, high employee turnover has been a recurring problem throughout the hospitality industry.

occupation /ˌɒkjʊˈpeɪʃn/ (noun, B2) a job or type of work

According to a leading business consultancy, 3-14% of the global workforce will need to switch to a different occupation within the next 10-15 years, and all workers will need to adapt as their occupations evolve alongside increasingly capable machines.

affordable /əˈfɔːdəbl/ (adjective, B2) cheap enough for most people to buy

Finally, by the 1950s, refrigerator technology had developed far enough to make these appliances affordable for the average family.

expense /ɪkˈspens/ (noun, B2) the money spent on something

The chosen route ran beneath existing main roads to minimise the expense of demolishing buildings.

Society and culture

heritage /ˈherɪtɪdʒ/ (noun, B2) history, buildings and traditions passed down from the past

And it is the conservation of the world's cultural heritage against looting and careless harm.

indigenous /ɪnˈdɪdʒənəs/ (adjective, C1) living in a place from the earliest times

The first stage was achieved by Neolithic agrarians who were likely to have been indigenous to the British Isles.

ritual /ˈrɪtʃuəl/ (noun, B2) a ceremony with actions always done the same way

Alternatively, the carving may have been carried out during a Bronze or Iron Age ritual.

custom /'kʌstəm/ (noun, B2) a traditional way of behaving in a society

At the same time, they might help to preserve local customs, slowing the spread of habits associated with international English, such as its readiness to get on first-name terms.

civilisation /ˌsɪvəlaɪ'zeɪʃn/ (noun, B2) a society with its own culture and way of life

Although piracy in the Mediterranean is first recorded in ancient Egypt during the reign of Pharaoh Amenhotep III (c 1390-1353 BCE), it is reasonable to assume it predated this powerful civilisation.

inhabitant /ɪn'hæbɪtənt/ (noun, B2) a person or animal that lives in a place

In the ancient times, the inhabitants of these areas relied heavily on marine resources, including fish and salt.

demographic /ˌdemə'græfɪk/ (adjective, C1) relating to a population's size, age and other features

About three out of four families in Kenya depend on wood or charcoal to cook their daily meals, and the rate is even higher in rural areas, Kenya's latest demographic and health survey shows.

elderly /'eldəli/ (adjective, B1) old (a polite word)

Elderly people are growing healthier, happier and more independent, say American scientists.

ethical /'eθɪkl/ (adjective, B2) relating to what is morally right or wrong

Knauff has observed that individuals in such groups don't accumulate property or possessions and have an ethical obligation to share everything.

prejudice /'predʒʊdɪs/ (noun, C1) an unfair opinion formed without good reason or knowledge

In order to succeed, Whaley needs to get the local people on board, and that has meant overcoming local prejudices.

identity /aɪ'dentəti/ (noun, B2) who a person is; a sense of belonging to a group

Neuroscience has revealed which brain circuits are responsible for functions like understanding what other people think, empathy, fairness, and social identity.

minority /maɪ'nɒrəti/ (noun, B2) a smaller group that is different from the rest

Quite often, governments try to kill off a minority language by banning its use in public or discouraging its use in schools, all to promote national unity.

migration /maɪ'greɪʃn/ (noun, B2) moving from one place to live in another

They are so poor they have to live in slums and, as a result of migration, they may speak languages that are different from the regional language.

immigrant /'ɪmɪgrənt/ (noun, B2) a person who comes to live permanently in a new country

On a societal level, one could even imagine that a lack of conversational flow may hamper the integration of immigrants who have not completely mastered the language of their new country yet.

status /'stetəs/ (noun, B2) social or professional position compared with others

Some cultural traditions demand solemn respect for academic status, for example, and it is only polite to respect this.

poverty /'pɒvəti/ (noun, B2) the state of being very poor

One response to the boycott movement has been the argument for the vital role palm oil plays in lifting many millions of people in the developing world out of poverty.

welfare /'welfeə/ (noun, C1) the health, safety and happiness of people

When I ask fire science students to articulate the end, or purpose, of their field, they eventually generalize to something like, "The safety and welfare of society," which seems right.

norm /nɔ:m/ (noun, C1) an accepted standard way of behaving

Etiquette-sensitive artificial translators could relieve people of the need to know these differing cultural norms.

hierarchy /'haɪəɹɑ:ki/ (noun, C1) a system that ranks people by importance or power

In fact, research shows that, when innovating, the best approach is to create an environment devoid of structure and hierarchy and enable everyone involved to engage as one organic group.

ancestor /'ænsɛstə/ (noun, B2) a family member who lived a long time ago

When our ancestors found themselves surrounded by hungry animals, they would have benefited from an increased ability to learn about hazards.

folklore /'fɒlklo:/ (noun, C1) the traditional stories and beliefs of a community

Local folklore maintains that the statues walked, while researchers have tended to assume the ancestors dragged the statues somehow, using ropes and logs.

legacy /'legəsi/ (noun, C1) something left by a person or period for later generations

In collecting paintings that they loved, the sisters created a lasting and meaningful cultural legacy for the people of Wales and beyond.

artefact /'ɑ:tɪfækt/ (noun, C1) an object made by people, especially long ago

There they found numerous artefacts, including fragments of axes, some dating to about 14,000 years ago.

Science and research

discipline /ˈdɪsəplɪn/ (noun, C1) a subject or area of study

An emerging discipline called neuroaesthetics is seeking to bring scientific objectivity to the study of art, and has already given us a better understanding of many masterpieces.

breakthrough /ˈbreɪkθruː/ (noun, B2) an important new discovery or development

Not long after that, Perkin made the scientific breakthrough that would bring him both fame and fortune.

hypothesis /ˈhaɪpəθəʊsɪs/ (noun, C1) an idea suggested to explain something, not yet proved

Bones, tools and other artefacts found on the site seem to support this hypothesis.

empirical /ɪmˈpɪrɪkl/ (adjective, C1) based on observation or experiment, not theory

Despite all this, there is limited empirical evidence to suggest that streaming results in better outcomes for students.

specimen /ˈspesɪmən/ (noun, C1) a single example of an animal or plant, used for study

Sadly, the passenger pigeon's existence came to an end on 1 September 1914, when the last living specimen died at Cincinnati Zoo.

analysis /əˈnæləsɪs/ (noun, B2) a detailed examination to understand something

DNA analysis showed that all six species of bat had fed on economically important insect pests.

methodology /ˌmeθəˈdɒlədʒi/ (noun, C1) the system of approaches and techniques used in a study

It is in the light of an expectation that some observations are held to be relevant and some irrelevant, that one methodology is chosen and others discarded, that some experiments are conducted and others are not.

phenomenon /fəˈnɒmɪnən/ (noun, B2) something that happens or exists, often unusual or interesting

Urban farming is not, of course, a new phenomenon.

variable /ˈveəriəbl/ (noun, C1) a factor that can change and affect results

Analysing the trends in each variable, the researchers discovered that species with more flexible lifecycles were more likely to be able to benefit from an earlier emergence driven by climate change.

correlation /ˌkɒrəˈleɪʃn/ (noun, C1) a link between two things that change together

One interesting correlation Manton uncovered is that better-educated people are likely to live longer.

finding /ˈfaɪndɪŋ/ (noun, B2) information discovered as a result of research

According to the researchers, this unexpected finding may be down to the life experiences of children growing up in slums.

observation /ˌɒbzəˈveɪʃn/ (noun, B2) watching something carefully to learn about it

With exceptionally keen powers of observation and great finesse with a paintbrush, she recorded subtle nuances of colour, shape, and light that enlivened her paintings and attracted a wide audience.

investigate /ɪnˈvestɪgeɪt/ (verb, B2) to study something carefully to discover the truth

My colleague and I, both neuroscientists, wanted to investigate how the mind operates under stress, so we visited some local fire stations.

quantify /ˈkwɒntɪfaɪ/ (verb, C1) to measure something or express it as a number

Alternatively, by comparing the experiences of identical twins with those of fraternal twins, who come from separate eggs and share on average half their DNA, researchers can quantify the extent to which our genes affect our lives.

replicate /ˈreplɪkeɪt/ (verb, C1) to repeat a study to check that results are the same

Professor of Psychology Timothy Bates, who has been trying to replicate Dweck's work, is finding that the results are repeatedly null.

genetic /dʒəˈnetɪk/ (adjective, B2) relating to the cell units that parents pass to their children

They compared the genetic structure of polar bears with that of their closest relatives from a warmer climate, the brown bears.

organism /ˈɔːɡənɪzəm/ (noun, C1) a single living thing, such as a plant or animal

In biological systems, organisms may display new characteristics that result from random genetic mutations.

evolution /ˌiːvəˈluːʃn/ (noun, B2) gradual change in living things over many generations

It is by now a truism that the story of human evolution is being rethought.

evolutionary /ˌiːvəˈluːʃənəri/ (adjective, C1) relating to how living things develop over time

Like many others, Dawkins justifies his views with reference to the field of evolutionary psychology.

mutation /mjuːˈteɪʃn/ (noun, C1) a change in a gene that can be passed on

In humans, mutations of this gene are associated with increased risk of heart disease.

bacteria /bækˈtɪəriə/ (noun, B2) tiny living things, some of which cause disease

Once the water has drained away, bacteria and fungi then break down the carbon in the peat and turn it into CO₂ and methane.

rigorous /ˈrɪɡərəs/ (adjective, C1) very careful, thorough and exact

Once you have arrived at your hypothesis, which is a product of your imagination, you then proceed to a strictly logical and rigorous process, based upon deductive argument - hence the term 'hypothetico-deductive'.

excavation /ˌɛkskəˈveɪʃn/ (noun, C1) digging in the ground to find ancient objects

Archaeological excavations indicate that the Rapanui went to heroic efforts to protect the resources of their wind-lashed, infertile fields.

archaeological /ˌɑːkiəˈlɒdʒɪkl/ (adjective, B2) relating to the study of ancient remains

But to support this idea, they needed archaeological evidence for humans living in this remote area in the ancient past.

anecdotal /ˌænɪkˈdəʊtl/ (adjective, C1) based on personal stories, not careful research

Although quantitative evidence of AHI's initiatives at SAH are limited at present, anecdotal evidence clearly suggests that these practices are working.

Crime and law

criminal /ˈkrɪmɪnl/ (adjective, B2) against the law; relating to illegal acts

That course is presumably all about "means": how to detect and prosecute criminal activity.

sentence /ˈsentəns/ (verb, C1) (of a judge) to give an official punishment

Similar difficulties arose in the legal domain when algorithms were used in courts in the US to sentence criminals.

police /pəˈliːs/ (verb, C1) to control something and make sure rules are obeyed

Powerful artificial intelligence (AI) needs to be reliably aligned with human values, but does this mean AI will eventually have to police those values?

punishment /ˈpʌnɪʃmənt/ (noun, B2) a penalty for doing something wrong

Pirate attacks on grain ships, which were essential to Roman citizens, led to angry voices in the Senate, demanding punishment of the culprits.

fraud /frɔːd/ (noun, C1) deceiving people, often to get money

These ranged from 'sensory leakage' - where clues about the pictures accidentally reach the receiver - to outright fraud.

legislation /ˌledʒɪsˈleɪʃn/ (noun, C1) laws made by a government or parliament

While policy makers struggle to define and implement appropriate legislation, development of the most destructive kind has continued apace over vast areas.

regulation /ˌregjuˈleɪʃn/ (noun, B2) an official rule that controls an activity

Along with biblical texts, the scrolls include documents about sectarian regulations and religious writings that do not appear in the Old Testament.

illegal /ɪˈliːgl/ (adjective, B1) not allowed by law

Manatee hunting is now illegal in every country the African species is found in.

enforce /ɪnˈfɔːs/ (verb, C1) to make sure people obey a law or rule

Local authorities in London are campaigning to be allowed to enforce anti-pollution laws themselves; at present only the police have the power to do so, but they tend to be busy elsewhere.

justice /ˈdʒʌstɪs/ (noun, B2) fair treatment of people

In the past, the case for public transport has been made on the basis of environmental and social justice considerations rather than economics.

victim /ˈvɪktɪm/ (noun, B2) a person harmed by a crime, accident or illness

He believes the perennial theme of women as victims in stories like "Little Red Riding Hood" explains why they continue to feel relevant.

security /sɪˈkjʊərəti/ (noun, B2) protection against attack, crime or danger

Many researchers have warned against the rolling out of AI without appropriate security standards and defence mechanisms.

permit /ˈpɜːmɪt/ (noun, B2) an official document that allows you to do something

"If ranchers don't have a dead cow, they will not make a call to apply for a permit to kill a wolf."

dispute /dɪˈspjuːt/ (noun, C1) a serious disagreement between people or groups

And disputes over shared water resources have led to violence and continue to raise local, national and even international tensions.

abuse /əˈbjuːs/ (noun, B2) wrong or harmful use of something, such as power

Not surprisingly, biometrics raise thorny questions about privacy and the potential for abuse.

regulatory /ˈregjələtəri/ (adjective, C1) having the job of controlling an activity through rules

But she adds that taking the work further would be expensive because of the need to pay for a licence for the CRISPR technology and get regulatory approval.

Media and communication

transmit /trænz'mɪt/ (verb, C1) to send or pass on a signal or message

And in a twelve-year programme of work, Ryabko and Reznikova have found evidence that ants can transmit very complex messages.

publication /ˌpʌblɪ'keɪʃn/ (noun, B2) the act of printing and releasing a book or text

After its publication, his Dictionary was not seriously rivalled for over a century.

advertising /'ædvətaɪzɪŋ/ (noun, B1) telling people about products to make them buy them

In 1954, the company adapted some of Birdseye's freezing techniques, and with the help of a clever name and a huge advertising budget, it launched the first 'TV Dinner'.

audience /'ɔːdiəns/ (noun, B1) the people who watch, listen to or read something

While less technical than the research paper on which the chapter is based, it is probably more technical than would be preferred by a general audience.

narrative /'nærətɪv/ (noun, C1) a story or account of events

"Studies on hunter-gatherer folk tales suggest that these narratives include really important information about the environment and the possible dangers that may be faced there - stuff that's relevant to survival," he says.

documentary /ˌdɒkjʊ'mentri/ (noun, B1) a film or programme that gives facts about a real subject

In 2019, while making a documentary, David Scheel of Alaska Pacific University in the USA housed an octopus named Heidi in a tank in his living room.

verbal /'vɜːbl/ (adjective, B2) spoken; using words rather than actions

People likely have lied to one another for roughly as long as verbal communication has existed.

gesture /'dʒestʃə/ (noun, B2) a movement of the hand or head that shows meaning

Similarly, in the Museum of Natural History in Washington, Neanderthal man is shown making a dominant gesture to his wife.

linguistic /lɪŋ'ɡwɪstɪk/ (adjective, C1) relating to language

Modern science - linguistic, archaeological and genetic evidence - has definitively proved the moai builders were Polynesians, but not how they moved their creations.

convey /kən'veɪ/ (verb, C1) to make ideas, feelings or information known

This sleek design allows single sounds to convey useful information, and in fact even the absence of a sound has been enlisted to express something specific.

interpretation /ɪn'tɜːpre'teɪʃn/ (noun, C1) an explanation of what something means

Everything the brain sees, hears, or touches has multiple interpretations.

coverage /'kʌvərɪdʒ/ (noun, C1) the reporting of news by TV, radio and newspapers

This is surprising considering the high level of media coverage on this issue.

press /pres/ (noun, B2) newspapers and magazines and the journalists who write them

His work was enthusiastically welcomed by fellow sculptors, but the reviews in the press were extremely negative and turned Moore into a notorious figure.

campaign /kæm'peɪn/ (noun, B2) a planned set of actions to achieve a goal

This leads us to our third observation: a campaign to correct misinformation, even if rhetorically compelling, requires resources and planning to accomplish necessary reach and frequency.

persuade /pə'sweɪd/ (verb, B1) to make someone agree or act by giving reasons

Leading us gently by the hand, he takes us into the world of microbes - a bizarre, alien planet - in a bid to persuade us to love them as much as he does.

distort /dɪ'stɔːt/ (verb, C1) to change facts or images so they are no longer true

One of London Zoo's recent advertisements caused me some irritation, so patently did it distort reality.

medium /'miːdiəm/ (noun, C1) a way of communicating or expressing something

Further, it will adapt to that environment's requirements - from different writing systems to the characteristics of whatever medium is used.

Cities and travel

settlement /'setlmənt/ (noun, B2) a place where people have come to live

Today, four out of five of its people live in single-storey informal settlements on the spreading edges of the city, where the journey to and from the centre regularly takes over two hours.

urban /'ɜːbən/ (adjective, B2) relating to towns and cities

In Paris, urban farmers are trying a soil-free approach to agriculture that uses less space and fewer resources.

congestion /kən'dʒestʃən/ (noun, C1) too much traffic, so that movement is slow

Despite the extension of the underground railway, by the 1880s, congestion on London's streets had become worse.

suburb /'sʌbəːb/ (noun, B2) an area where people live on the edge of a city

Melbourne's large tram network has made car use in the inner city much lower, but the outer suburbs have the same car-based structure as most other Australian cities.

sprawl /sprɔːl/ (noun, C1) the spread of a city into the land around it

Urban sprawl means that life without a car is next to impossible.

residential /,rezɪ'denʃl/ (adjective, B2) (of an area or building) where people live, not work

In California, where population growth has averaged more than 600,000 a year for at least a decade, more residential housing is being built.

high-rise /'haɪ raɪz/ (noun, B2) a very tall building with many floors

Mass-produced, low-cost high-rises seemed to offer a solution to the problem of housing a growing inner-city population.

inner-city /ɪnə 'sɪti/ (adjective, C1) in the old central area of a large town, often poor

His idea was to relocate the poor workers who lived in the inner-city slums to newly constructed suburbs, and to provide cheap rail travel for them to get to work.

tourism /'tʊərɪzəm/ (noun, B1) the business of providing services for people on holiday

Tourism currently makes up 9% of the country's gross domestic product, and is the country's largest export sector.

destination /,destɪ'neɪʃn/ (noun, B1) the place someone or something is going to

Large merchant ships would approach the destination port and, just like today, be intercepted by a number of towboats that would drag them to the quay.

accommodation /ə,kəmə'deɪʃn/ (noun, B1) a place to live or stay

The explosion in demand for accommodation in the inner suburbs of Melbourne suggests a recent change in many people's preferences as to where they live.

overcrowded /,əʊvə'kraʊdɪd/ (adjective, B2) with too many people in one place

The area within consisted of poorly built, overcrowded slums and the streets were full of horse-drawn traffic.

municipal /mjuː'nɪsɪpl/ (adjective, C1) belonging to or run by a town or city

These correspond roughly to small municipal, medium-sized metropolitan and major metropolitan airports respectively, and encompass an increasingly rigorous set of regulations.

density /'densəti/ (noun, C1) how many people or things are in an area

With such small population densities, it seems unlikely that prehistoric hunter-gatherer groups had to compete against each other for resources or had any need to develop ruthlessness and competitiveness, or to go to war.

voyage /'vɔɪdʒ/ (noun, B2) a long journey, especially by sea

It also seemed likely that these islands were crucial "stepping stones" on humans' island-hopping voyages through this region millennia ago.

landmark /'lændmɑːk/ (noun, B2) a building or feature that is easy to recognise

They sailed by noting their position relative to a succession of recognisable landmarks.

architecture /'ɑːkɪtektʃə/ (noun, B1) the design and style of buildings

Although the Renaissance is renowned as an era of incredible progress in art and architecture, it is rarely noted that the 15th century also marked the birth of urbanism as a true academic discipline.

sanitation /,sænɪ'teɪʃn/ (noun, C1) systems for clean water and removing human waste

This rapid urbanisation brought significant challenges, as overcrowded cities suffered from pollution and inadequate sanitation.

mobility /məʊ'bɪləti/ (noun, C1) the ability to move or travel easily

During Phase II, from January to February 1991, a number of approaches were implemented in an effort to improve mobility and access to transport.

housing /'haʊzɪŋ/ (noun, B2) houses and flats, especially for many people

During this period, there was an emphasis on providing clean water, improved sanitation and housing.

expedition /,ekspə'dɪʃn/ (noun, B2) an organised journey to explore a place

Between 1906 and 1908 he had taken part in a highly publicized and extremely dangerous expedition to the coast of northeast Greenland.

navigate /'nævɪgeɪt/ (verb, C1) to find your way through or around a place

Outside the centre many rely on boda boda (motorbike taxis) to navigate the narrow side streets and potholed mud roads that make up much of the metropolis.

General academic

comprehend /ˌkɒmpri'hend/ (verb, C1) to understand something fully

Even if it can be technically explained (and that's not always the case), AI's decision-making process is usually too difficult for most people to comprehend.

abundant /ə'bʌndənt/ (adjective, C1) existing in large amounts; more than enough

Canned foods were rationed to save tin for the war effort, while frozen foods were abundant and cheap.

scarce /skeəs/ (adjective, B2) not available in large enough amounts

When food is scarce, bats become a crucial source of protein for local people.

autonomous /ɔ:'tɒnəməs/ (adjective, C1) able to act and decide independently

The purpose of teaching is to provide and then gradually remove this 'scaffolding' until they are autonomous.

reputation /ˌrepju'teɪʃn/ (noun, B2) the opinion that people generally have of someone

Such daring compositions helped establish O'Keeffe's reputation as an innovative modernist.

significant /sɪɡ'nɪfɪkənt/ (adjective, B2) large or important enough to have a noticeable effect

This rapid urbanisation brought significant challenges, as overcrowded cities suffered from pollution and inadequate sanitation.

considerable /kən'sɪdərəbl/ (adjective, B2) large in size, amount or degree

There has been a considerable amount of research on high performance over the last century that suggests it goes way beyond tested intelligence.

substantial /səb'stæntʃl/ (adjective, B2) large in amount or importance

Despite the Egyptian fleet's best efforts, the pirates continued to cause substantial disruption to regional commerce.

crucial /'kru:ʃl/ (adjective, B2) extremely important, because other things depend on it

There are some crucial lessons here for everyone aiming to boost investments in national AI programmes.

fundamental /ˌfʌndə'mentl/ (adjective, B2) basic and most important

The environmental practices of big businesses are shaped by a fundamental fact that for many of us offends our sense of justice.

inevitable /ɪn'evɪtəbl/ (adjective, B2) certain to happen and impossible to avoid

Such is our dependence on fossil fuels, and such is the volume of carbon dioxide already released into the atmosphere, that many experts agree that significant global warming is now inevitable.

approximately /ə'prɒksɪmətli/ (adverb, B2) close to a number but not exactly

It had rowers in the top, middle and lower levels, and approximately 50 rowers in each bank.

estimate /'estɪmeɪt/ (verb, B2) to judge a number or amount roughly from the facts known

The World Health Organization estimates that about 14,300 Kenyans die annually as a result of indoor air pollution - most of which is caused by cooking and heating sources.

indicate /ɪndɪkeɪt/ (verb, B2) to show or suggest that something is true

The evidence indicates that guard dogs are highly effective.

assumption /ə'sʌmpʃn/ (noun, B2) something accepted as true without proof

There has long been a general assumption that human beings are essentially selfish.

contribute /kən'trɪbjʊ:t/ (verb, B2) to be one of the causes of something

These factors mean that they may not be as accessible to the general public, require more energy to run and contribute to urban heat.

enhance /ɪn'hɑ:ns/ (verb, C1) to improve the quality, amount or value of something

Indeed, Australian researchers are now using dogs to enhance biodiversity and create refuges for species threatened by predation.

facilitate /fə'sɪlɪteɪt/ (verb, C1) to make a process easier or more likely

This 'mental break' might facilitate the replenishment of mental resources.

diminish /dɪ'mɪnɪʃ/ (verb, C1) to become smaller, weaker or less important

Though the practical need for a common language will diminish, the social value of sharing one will persist.

fluctuate /'flʌktʃueɪt/ (verb, C1) to change often between higher and lower levels

In the temperate zone in spring, temperatures fluctuate greatly from day to day, but day length increases steadily by a predictable amount.

comprise /kəm'praɪz/ (verb, C1) to be made up of particular parts

Peat comprises 90 per cent water, so this is one of the most alarming consequences of peatland clearances.

exceed /ɪk'si:d/ (verb, C1) to be greater than a number or amount

Janssen says that by 2030 half of the world's population will be living with water stress - where the demand exceeds the supply over a certain period of time.

implication /ɪmplɪ'keɪʃn/ (noun, C1) a likely effect or result of something

In fact, some of the island's insectivorous bats are currently thriving and this has important implications for farmers and conservationists alike.

perception /pə'sepʃn/ (noun, C1) the way people see or understand something

It is worth noting that contrary to popular perception, rowers were not slaves but mostly Roman citizens enrolled in the military.

predominantly /prɪ'dɒmɪnəntli/ (adverb, C1) mostly; mainly

While the Mediterranean region is predominantly fertile, some parts are rugged and hilly, even mountainous.

sufficient /sə'fɪʃnt/ (adjective, B2) enough for a particular purpose

If necessary, they will chase away predators, but often their mere presence is sufficient.

plausible /'pləʊzəbl/ (adjective, C1) seeming reasonable and likely to be true

Perhaps the most plausible suggestion as to why leaves would go to the trouble of making anthocyanins when they're busy packing up for the winter is the theory known as the 'light screen' hypothesis.

controversial /kən'trəvɜːʃl/ (adjective, B2) causing a lot of public disagreement

More controversial is the date of the enigmatic Long Man of Wilmington in Sussex.

ambiguous /æm'bɪɡjuəs/ (adjective, C1) having more than one possible meaning

As with error correction, however, there's a limit beyond which messages become too ambiguous.

profound /prə'faʊnd/ (adjective, C1) very great or deeply felt

Thus, tourism has a profound impact both on the world economy and, because of the educative effect of travel and the effects on employment, on society itself.

unprecedented /ʌn'presɪdɪntɪd/ (adjective, C1) never having happened or existed before

Unprecedented construction of tens of thousands of monumental engineering projects designed to control floods, protect clean water supplies, and provide water for irrigation and hydropower brought great benefits to hundreds of millions of people.

widespread /'waɪdspred/ (adjective, B2) existing or happening in many places

In recent years, however, as increased efforts have been made to protect wild animals, predators have become more widespread again.

prevalent /'prevələnt/ (adjective, C1) common in a particular place or time

These were the traits that were prevalent in human life for tens of thousands of years.

distinctive /dɪ'stɪŋktɪv/ (adjective, C1) having a quality that makes it easy to recognise

They are also looking at whether the types of pottery used, and other aspects of their material culture, were distinctive to specific regions or were more similar across larger areas.

equivalent /ɪ'kwɪvələnt/ (noun, C1) something with the same value, use or purpose

She was the only woman to win the Fields Medal - the mathematical equivalent of a Nobel prize.

notion /'nəʊʃn/ (noun, C1) an idea or belief

There is significant evidence to back this notion from contemporary hunter-gatherer groups, who live in the same way as prehistoric humans did.

framework /'freɪmwɜːk/ (noun, C1) a set of ideas used to understand or decide things

Implicit theories provide a framework that is useful in defining the general scope of a phenomenon - especially a not-well-understood phenomenon.

criterion /kraɪ'tɪəriən/ (noun, C1) a standard used to judge or decide something

A majority of the contemporary definitions of play focus on several key criteria.

extent /ɪk'stent/ (noun, B2) how large, important or serious something is

Not everyone will benefit from silence to the same extent, but Ben-Soussan says one characteristic is key: the person must need to want to engage in the experience.

consensus /kən'sensəs/ (noun, C1) general agreement among a group of people

While there is consensus among the majority of modern scholars that Stonehenge once served the function of burial ground, they have yet to determine what other purposes it had.

dilemma /dɪ'lemə/ (noun, C1) a difficult situation with no easy solution

Whatever the cause, the dilemma is always the same: what happens if these new, external sources of income dry up?

constraint /kən'streɪnt/ (noun, C1) something that limits what you can do

Machines will be free of many of the physical constraints on human intelligence.

obstacle /'ɒbstəkl/ (noun, B2) something that blocks your way or stops progress

The Romans dug tunnels for their roads using the counter-excavation method, whenever they encountered obstacles such as hills or mountains that were too high for roads to pass over.

drawback /'drɔːbæk/ (noun, B2) a disadvantage or problem

A major drawback of vertical farming, however, is that the plants would require artificial light.

adverse /'ædvɜːs/ (adjective, C1) harmful or unpleasant

We asked the firefighters to estimate their likelihood of experiencing 40 different adverse events in their life, such as being involved in an accident or becoming a victim of card fraud.

beneficial /,benɪ'fɪʃl/ (adjective, B2) having a good or helpful effect

Researchers are also seeking to understand what aspects of silent experiences are most beneficial to our health.

detrimental /,detrɪ'mentl/ (adjective, C1) causing harm or damage

This assumption has also fostered the idea that disorder must be detrimental to organisational productivity.

susceptible /sə'septəbl/ (adjective, C1) easily affected or harmed by something

Wood expands as it absorbs moisture from the air and is susceptible to pests, not to mention fire.

vulnerable /'vʌlnərəbl/ (adjective, B2) easily hurt or harmed

It's thought that they don't experience REM sleep because during REM sleep animals are more vulnerable to extremes of temperature.

viable /'vaɪəbl/ (adjective, C1) able to work successfully

The brothers made one final attempt to produce a viable steam automobile.

sustain /sə'steɪn/ (verb, C1) to provide what is needed to keep someone alive

The Desolenator can produce 15 litres of drinking water per day, enough to sustain a family for cooking and drinking.

accumulate /ə'kjuːmjəleɪt/ (verb, C1) to collect more and more of something over time

We're apparently ruthless, with strong impulses to compete against each other for resources and to accumulate power and possessions.

compensate /'kɒmpenseɪt/ (verb, C1) to balance a bad effect with something good

The study suggests that people who smoke cigarettes are continually damaging their cardiovascular system, which adapts in order to compensate for the effects of smoking.

deteriorate /dɪ'tɪəriəreɪt/ (verb, C1) to become worse

But the vast majority of animals deteriorate with age just like people do.

inhibit /ɪn'hɪbɪt/ (verb, C1) to slow down or prevent a process

Positive emotions facilitate the creative aspects of learning and negative emotions inhibit it.

tendency /'tendənsi/ (noun, B2) a likelihood to behave or think in a particular way

This suggests people use relevant evidence about AI in a biased manner to support their existing attitudes, a deep-rooted human tendency known as "confirmation bias".

subtle /'sʌtl/ (adjective, C1) small and not easy to notice

Another change was so subtle as to pass more or less unnoticed.

comprehensive /,kɒmprɪ'hensɪv/ (adjective, B2) including all or nearly all parts

The impression is that the logical nature of the textbooks and their comprehensive coverage of different types of examples, combined with the relative homogeneity of the class, renders work sheets unnecessary.

intricate /'ɪntrɪkət/ (adjective, C1) having many small parts arranged in a complicated way

Unfortunately, all of the precautions and intricate design of the underground network did not prevent ancient robbers from finding a way in.

conventional /kən'venʃənəl/ (adjective, B2) usual or traditional

Using these insights, Coach launched the lower-priced Poppy handbags, which were in vibrant colors, and looked more youthful and playful than conventional Coach products.

abrupt /ə'brʌpt/ (adjective, C1) sudden and unexpected

These abrupt changes will produce either positive or negative feelings.

merely /'mɪəli/ (adverb, B2) only; nothing more than

These notions merely label rather than explain the evolution of human innovations.

virtually /ˈvɜːtʃuəli/ (adverb, B2) **almost completely**

Because identical twins come from a single fertilized egg that splits into two, they share virtually the same genetic code.