

12 Fast Forward

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- 12.1 fast forward** (expr) /fɑːst 'fɔːwəd/
moving ahead at a faster pace than usual
• *Press fast forward on the DVD remote to go more quickly to the next scene.*

Word Focus

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- 12.2 recoup** (v) /riː'kuːp/
get back money you have given or spent
• *He recouped the money he spent on the company when profits increased dramatically.*
- 12.3 light year** (n) /laɪt jɪə/
a very long time • *Manned space travel to distant planets seems light years away.*
- 12.4 title deed** (n) /'taɪtl diːd/
a legal document proving your ownership of property • *Frank is the owner of this property so he has the title deed.*
- 12.5 helium** (n) /'hiːliəm/
a light gas that doesn't burn, often used to fill balloons • *The child's balloon was filled with helium.*
- 12.6 trespass** (v) /'trespɑːs/
enter land or building without permission
• *The walkers trespassed on the farmer's land by crossing the field that was marked Private.*
> trespasser (n), trespassing (n)
- 12.7 fuel-laden** (adj) /'fjuːəl-,leɪdən/
heavily loaded with fuel • *The fuel-laden plane took off for its eight-hour flight to New York.*
- 12.8 money-spinner** (n) /'mʌni 'spɪnə/
a project that makes money • *His latest money-spinner is selling tickets for flights to the Moon.*
- 12.9 plot** (n) /plɒt/
a piece of land • *He bought a small plot of land in the countryside.*
- 12.10 footprint** (n) /'fʊtprɪnt/
a mark in the ground left by a foot or shoe
• *I made footprints in the mud as I walked across the field.*

- 12.13 astronomical** (adj) /ɑːstrə'nɒmɪkl/
enormous • *The banker received an astronomical bonus of three years' salary.*
- 12.14 frontier** (n) /'frʌntɪə/
an area where people have never lived before
• *Space is the last frontier, but one day people will establish colonies there.*
- 12.15 foundation** (n) /faʊn'deɪʃn/
an organisation that gives money to be used for a special purpose • *The Arts Foundation needs more funds to support young artists.*
> found (v)
- 12.16 settlement** (n) /'setlmənt/
a place where people come to live and build their homes • *This village is on the site of an ancient settlement.* > settle (v), settler (n)
- 12.17 commerce** (n) /'kɒməːs/
business • *He works in commerce as a sales representative.* > commercial (adj)
- 12.18 critical** (adj) /'krɪtɪkl/
very important • *Funds are critical for the expensive project.*
- 12.19 concrete example** (expr) /'kɒŋkri:t ɪks'ɑːmpl/
a specific example • *A concrete example of space exploration is the Moon landing.*
- 12.20 promising** (adj) /'prɒmɪsɪŋ/
likely to succeed • *The promising business venture is bound to be a success.* > promise (v, n)
- 12.21 manufacture** (v) /mænju'fæktʃə/
produce; make • *This factory is where they manufacture steel bars for buildings.*
> manufacturer (n)
- 12.22 lunar colony** (n) /'luːnə 'kɒləni/
a settlement on the Moon • *Would you ever agree to live in a lunar colony?*
- 12.23 acre** (n) /'eɪkə/
a unit for measuring area (4,047 square metres)
• *This small plot is one acre in size.*
- 12.24 ounce** (n) /aʊns/
a unit for measuring weight (about 28 grams)
• *You need four ounces of butter to make the cake.*
- 12.25 back down** (phr v) /bæk daʊn/
admit you are wrong • *He knows he's in the wrong, but he refuses to back down.*
- 12.26 license** (n) /'laɪsəns/
an official document giving permission for sth
• *The restaurant doesn't have a license to sell alcohol.* ☞ Also: licence (BrE)
- 12.27 space agency** (n) /speɪs 'eɪdʒənsi/
an organisation that studies and sends people to space • *NASA, the American space agency, has sent a spacecraft to Mars.*

Reading

pages 148-149

- 12.11 state secret** (n) /steɪt 'siːkrɪt/
sth only the government knows about • *It's no state secret that NASA have sent a robot to Mars.*
- 12.12 allocate** (v) /'æləkeɪt/
give for a particular purpose • *The Ministry of Education has allocated money to schools to buy essential equipment.* > allocation (n)

- 12.28 treaty** (n) /'tri:ti/
an agreement between countries • *The two countries signed a trade agreement.*
- 12.29 stick to one's guns** (expr) /stɪk tʊ wʌnz ɡʌnz/
refuse to change your opinion • *Dad didn't want me to study drama but I stuck to my guns and applied to drama school.*
- 12.30 file** (v) /faɪl/
give a document to an organisation so it can be officially recorded • *He filed a complaint against his neighbours for being noisy every night.*
- 12.31 ownership** (n) /'əʊnəʃɪp/
when sth belongs to you • *Gun ownership in America is legal, but many people disagree with it.* > own (v), owner (n)
- 12.32 individual** (n) /ɪndɪ'vɪdʒuəl/
a person • *Each individual in this firm has something to offer.* > individual (adj)
- 12.33 venture** (n) /'ventʃə/
a business that involves risks • *Her business venture succeeded and she made a lot of money.*
- 12.34 part with one's cash** (expr) /pɑ:t wɪð wʌnz kæʃ/
spend or give away money • *He didn't buy the laptop because he couldn't part with his cash.*
- 12.35 slice** (n) /slaɪs/
a thin piece cut from a larger piece • *I put two slices of cheese in my sandwich.*
- 12.36 pay for sth out of one's own pocket** (expr) /peɪ fɔ: 'sʌmθɪŋ aʊt ɒn wʌnz əʊn 'pɒkɪt/
pay for sth using personal funds • *I have to pay for a new phone out of my own pocket because mum hasn't got the money at the moment.*
- 12.42 hunch** (n) /hʌntʃ/
an idea based on a feeling • *I have a hunch that Fred will call today, but I could be wrong.*
- 12.43 educated guess** (expr) /æn 'edʒukeɪtɪd ges/
a guess based on some information you already have • *The scientist made an educated guess about what the terrain on Mars would be like.*
- 12.44 see sth coming** (expr) /si: 'sʌmθɪŋ 'kʌmɪŋ/
predict • *'David has decided to drop out of university and become a fisherman.'* 'Wow! I didn't see that coming!'
- 12.45 omen** (n) /'əʊmən/
a sign of what will happen in the future • *Let's hope a rise in the stock markets today is a good omen for the end of the recession.* > ominous (adj)
- 12.46 mimic** (v) /'mɪmɪk/
copy what sb does • *The child mimicked his mother and learned by copying her every move.* > mimic (n)
- 12.47 artificial intelligence** (n) /ɑ:tɪ'fɪʃl ɪn'telɪdʒəns/
computer technology where computers work in a similar way to human brains • *Artificial intelligence is used to build computers that learn as they function.*
- 12.48 humankind** (n) /'hju:mən,kɑɪnd/
people • *Humankind is thought to be the only species with a sense of its own demise.*
- 12.49 genetic engineering** (n) /dʒə'netɪk endʒɪ'nɪəɪŋ/
the science of changing the genetic structure of organisms • *Genetic engineering could find a way of creating humans that live longer.*
- 12.50 wireless telecommunications** (pl n) /'waɪələs telɪkəmju:nɪ'keɪʃnz/
the transfer of information between two or more points that are not connected by an electrical conductor • *Wireless telecommunications have made mobile phones a reality.*

Vocabulary pages 150-151

- 12.37 pattern** (v) /'pætən/
decorate • *He patterned the wall with a floral design wallpaper.* > pattern (n)
- 12.38 shape one's future** (expr) /ʃeɪp wʌnz 'fju:tʃə/
determine what will happen to you • *What you decide to study after school will shape your future.*
- 12.39 know what the future holds** (expr) /nəʊ wɒt ðə 'fju:tʃə həʊldz/
know what will happen in the future • *Nobody can know what the future holds.*
- 12.40 outcome** (n) /'aʊtkʌm/
a result • *It is hoped the outcome of the Mars mission will be a success.*
- 12.41 upshot** (n) /'ʌpʃɒt/
the result of a series of events • *The upshot of the team's successes is that they are first in the league.*
- 12.51 speech recognition** (n) /spi:tʃ rekəg'nɪʃn/
the ability of a computer to recognise what sb is saying • *This computer carries out my spoken commands thanks to a speech recognition program.*
- 12.52 eternity** (n) /ɪ'tɜ:nɪti/
a very long time; the whole of time without any end • *It seemed like an eternity while I was waiting for the bus in the rain.* > eternal (adj)
- 12.53 infinity** (n) /ɪn'fɪnɪti/
endless space and time • *Numbers never end so you could go on counting to infinity.* > infinite (adj)
- 12.54 posterity** (n) /pɒ'sterəti/
people who will live in the future • *We must save the environment for ourselves and for posterity.*

- 12.55 immortal** (adj) /ɪ'mɔːtəl/
living for ever • *The Greek gods were immortal.* > immortality (n) 📖 Opp: mortal
- 12.56 intended** (adj) /ɪn'tendɪd/
meant • *The intended result was to make a lovely cake but this mess looks like something else.* > intend (v)
- 12.57 perpetual** (adj) /pə'petʃuəl/
continuing forever in the same way • *The robber lived in perpetual fear of being caught by the police.*
- 12.58 timeless** (adj) /'taɪmləs/
not changing as the years go by; not becoming old-fashioned • *The most stylish clothes are timeless and have nothing to do with fashion.* > time (v, n)
- 12.59 pioneering** (adj) /pɪə'niːərɪŋ/
introducing new ideas for the first time
• *Bill Gates is a pioneering businessman who helped create the technology we know today.* > pioneer (v, n)
- 12.60 preceding** (adj) /prɪ'siːdɪŋ/
happening before sth else • *The programme preceding this one finished five minutes ago.* > precede (v)
- 12.61 visionary** (adj) /'vɪʒənri/
having new ideas for the future • *Visionary people see a future where living on other planets is possible.* > vision (n)
- 12.62 looming** (adj) /'luːmɪŋ/
having a threatening appearance • *Bad weather was looming and the sky was as black as night.* > loom (v)
- 12.63 menacing** (adj) /'menəsɪŋ/
threatening • *They were scared of his menacing manner and knew he meant to do them harm.* > menace (v, n)
- 12.64 anticipated** (adj) /æn'tɪsɪpeɪtɪd/
expected • *The anticipated storm hit the area as predicted in the night.* > anticipate (v), anticipation (n)
- 12.65 fated** (adj) /'feɪtɪd/
bound to happen • *He was fated to meet his death on that long journey.* > fate (n)
- 12.66 rational** (adj) /'ræʃənəl/
based on reason • *She is a rational person so she will definitely accept a reasonable explanation.* > rationale (n)
📖 Opp: irrational
- 12.67 unexpected** (adj) /ʌnɪks'pektɪd/
not predicted • *We had an unexpected visit from Kay who dropped by to surprise us.* > expect (v)
- 12.68 unforeseen** (adj) /ʌnfɔː'siːn/
not predicted • *The unforeseen market crash was a shock to all investors.* > foresee (v)
- 12.69 disposable** (adj) /dɪs'pəʊzəbl/
which can be thrown away • *We used disposable plates at the picnic and threw them away in the bin.* > dispose (v), disposal (n)
- 12.70 inescapable** (adj) /ɪnɪs'keɪpəbl/
impossible to escape; bound to happen
• *It's an inescapable fact that we will all die one day.* > escape (v, n)
- 12.71 inevitable** (adj) /ɪn'evɪtəbl/
impossible to avoid • *He drove so carelessly that the accident was inevitable.* > inevitability (n)
- 12.72 showpiece** (n) /'ʃəʊpiːs/
a very good example of sth that a government or organisation wants people to see • *The museum will be the new showpiece of the city when it opens next year.*
- 12.73 infrastructure** (n) /'ɪnfɹə'strʌktʃə/
facilities that make a place function • *Funding for the infrastructure of the city should lead to more building and road systems.*
- 12.74 ongoing** (adj) /ɒn'ɡɔɪŋ/
continuing • *Ongoing space exploration has sent a rocket to Mars, where information is being gathered.*
- 12.75 boast** (v) /bəʊst/
have sth that you are proud of • *Greece boasts some of the most beautiful islands in the world.*
- 12.76 initial** (adj) /ɪ'nɪʃl/
first • *The initial plan was to go to Italy but we changed our minds and went to France.* > initially (adv)
- 12.77 set the pace** (expr) /set ðə peɪs/
create an example for others to copy
• *The athlete in the lead set the pace for the 1500m heat.*
- 12.78 geneticist** (n) /dʒə'netɪsɪst/
sb who is an expert in genetics • *She is a geneticist and she studies rare human genes.*
- 12.79 trend** (n) /trend/
a tendency • *The trend for humans to be taller may be due to better nutrition.* > trendy (adj)
- 12.80 upper** (adj) /'ʌpə/
in a higher position than sth else • *The upper limit for buildings in this area is six storeys, no higher.*
- 12.81 far-fetched** (adj) /fɑː-fetʃt/
very unlikely to be true • *His story about breaking the world record is far-fetched, and I don't believe him.*

Time

eternity
immortal
infinity

light year
perpetual
timeless

- 12.82 investment** (n) /ɪn'vestmənt/
when you spend a large amount of time or energy on sth • *Becoming a doctor means a huge investment of your time and energy for many years.* > invest (v), investor (n)
- 12.83 privacy** (n) /'prɪvəsi/
being alone; freedom from public attention
• *I have six brothers and sisters, so I don't get much privacy at home.* > private (adj)
- 12.84 rover** (n) /'rəʊvə/
a remotely operated vehicle used to explore Mars • *The data from the soil sample collected by the rover on Mars was studied by NASA scientists.*
- 12.85 outdo** (v) /,aʊt'duː/
do better or more than sb/sth else • *She outdid everyone else in the competition and won first prize.*
- 12.86 set one's sights on sth** (expr)
/set wʌnz saɪts ɒn 'sʌmθɪŋ/
decide you want sth and try to get it • *He has set his sights on becoming a doctor.*
- 12.87 prestige** (n) /pres'tɪʒ/
respect and admiration given to sb, usually because of high quality or success • *The opera singer has gained international prestige.*
> prestigious (adj)
- 12.88 at stake** (expr) /a:t steɪk/
at risk • *The scientist's reputation would be at stake if the experiment failed.*
- 12.89 beam** (v) /bi:m/
send (radio or television) signals over a long distance • *The images were beamed to Earth from space.* > beam (n)
- 12.90 humanity** (n) /hju:'mænɪti/
people • *Caring for the environment is something all of humanity should be involved with.*
- 12.91 solar system** (n) /'səʊlə 'sɪstəm/
the planets around a sun • *Earth is the only inhabited planet in our solar system.*
- 12.92 requisite** (adj) /'rekwɪzɪt/
necessary • *He had the requisite training to be an astronaut so he was accepted on the space mission.*
- 12.93 equation** (n) /ɪ'kweɪʒn/
a mathematical statement showing that two amounts are equal • *One of the most famous equations in the world is $E = mc^2$.*
- 12.94 particle physics** (n) /'pɑ:tɪkl 'fɪzɪks/
the study of the very small parts that make up an atom • *He is studying particle physics at university.*
- 12.95 lose one's temper** (expr) /lu:z wʌnz 'tempə/
get angry • *Sharon lost her temper and shouted angrily at Jack when he broke her new phone.*

- 12.96 not break the bank** (expr)
/nɒt breɪk ðə bæŋk/
not cost a lot of money • *That dress is lovely, and it won't break the bank either!*
- 12.97 omission** (n) /ə'mɪʃən/
not including sb/sth when they should have been included • *There are some very serious omissions in the book so I don't think you should use it as a source.*
- 12.98 biodiesel** (n) /'baɪəʊdɪ:zəl/
fuel made from agricultural products
• *It is feasible that in the future cars will run on biodiesel rather than petrol.*
- 12.99 demonstration** (n) /demən'streɪfən/
showing how to do sth or how sth works
• *The lecturer gave the chemistry students a demonstration of the experiment to show them how to do it.* > demonstrate (v)

Writing:

an essay (2) pages 156-157

- 12.100 primitive** (adj) /'prɪmətɪv/
belonging to a very simple society • *They live in a primitive house with no electricity or running water.* ☞ Opp: advanced; sophisticated
- 12.101 pessimistic** (adj) /pesɪ'mɪstɪk/
believing that bad things will happen in the future
• *He is pessimistic and thinks he has failed his exams.* > pessimism (n) ☞ Opp: optimistic
- 12.102 optimistic** (adj) /ɒptɪ'mɪstɪk/
believing that good things will happen in the future • *She feels optimistic that she will do well in all of her exams.* > optimism (n), optimistically (adv) ☞ Opp: pessimistic
- 12.103 doom** (v) /du:m/
be sure to fail, die, etc. • *Unfortunately, their efforts were doomed to failure.* > doom (n, v)
- 12.104 seek to do sth** (expr) /si:k tə du 'sʌmθɪŋ/
try to do sth • *The teenager is seeking to become more independent.*
- 12.105 defining feature** (expr) /dɪ'faɪnɪŋ 'fi:tʃə/
aspect that describes what sth is • *A defining feature of humans is their curiosity about the world around them.*
- 12.106 materialise** (v) /mə'tɪəriəlaɪz/
happen in the way you expect • *Her hopes of becoming an astronaut never materialised.*
- 12.107 greed** (n) /gri:d/
desire to have more than you need
• *Because of greed he would not share his good fortune with his poor neighbours.*
> greedy (adj)

12.108 altruism (n) /'æltrʊɪzəm/
caring about others, even when this is at a cost to yourself • *The doctor showed true altruism when he left his job to work with war refugees.*

Video 12:

Space Walk

page 158

12.109 pressurised (adj) /'preʃərəɪzd/
If a container is pressurised, the air inside it is kept at a controlled pressure. • *The marine biologists were safe inside the pressurised submarine as they dived to the depths of the ocean.* > pressure (n)

12.110 vacuum (n) /'vækju:m/
a space with no gas inside it • *Astronauts would never survive in the vacuum of space without a special suit.*

12.111 shuttle (n) /'ʃʌtl/
a spacecraft which goes beyond the Earth's atmosphere and returns like a plane • *The shuttle was the first craft to leave the earth's atmosphere and return.*

12.112 radiation (n) /reɪdɪ'eɪʃn/
dangerous energy sent out from some substances • *The radiation in the earth was being measured with a Geiger counter.*
> radioactive (adj)

12.113 tough (adj) /tʌf/
strong • *Jeans are made of tough material that doesn't rip easily.* > toughness (n)

12.114 orbit (n) /'ɔ:bɪt/
the path travelled by an object moving around another, larger object • *The space station is in orbit around the Earth and is actually visible from the ground.* > orbit (v)