



WORKBOOK 09 LESSON 20

CHALLENGE

Cambridge English – CERTIFICATE IN PROFICIENCY IN ENGLISH

READ THE TEXT BELOW AND CHOOSE THE CORRECT WORD FOR EACH SPACE.

THE END OF PROGRESS?

The remarkable (0) _____ in investment in scientific research in recent years, now routinely measured in hundred of millions of dollars, has (01) _____ a vast number of research papers. But it all seems to add up to surprisingly little in terms of (02) _____ developments, certainly compared to the early twentieth century, when poorly funded scientists rewrote the laws of physics and genetics.

A writer called John Horgan controversially proposed an explanation for the apparently (03) _____ relationship between the current scale of research funding and scientific progress. He argued that the very success of science in the past constrains its future (04) _____. Since the last century has (05) _____ a series of scientific discoveries that (06) _____ among the greatest intellectual achievements in history, it is difficult to imagine how such feats can be realistically (07) _____. However, many prominent scientists (08) _____ his argument by pointing to the historical record. The view that progress cannot be maintained indefinitely has been expressed many times before, only to be consistently disproved.

0	A torrent	B surge	C gush	D swell	B
01	A initiated	B evoked	C generated	D incited	C
02	A signpost	B landmark	C keynote	D cornerstone	B
03	A inverse	B converse	C adverse	D reverse	A
04	A probabilities	B forecasts	C prospects	D eventualities	C
05	A observed	B witnessed	C acknowledged	D testified	B
06	A score	B measure	C class	D rank	D
07	A surpassed	B overtaken	C excelled	D outdone	A
08	A retaliate	B contend	C retort	D counter	D

READING AND USE OF ENGLISH

READ THE TEXT BELOW AND THINK OF THE WORD WHICH BEST FITS EACH GAP. USE ONLY ONE WORD IN EACH GAP.

HANDWRITING

It is often pointed (0) OUT just how rare it is for people to communicate by putting pen to paper. Many of us have friends (09) WHOSE handwriting is unfamiliar to us because we have never seen it. This is (10) NOT to say that we should forgo all the advantages of electronic communication, but what it has led to is that some British schools no (11) LONGER teach handwriting, on the grounds that all children now have access to computers. But can this be justified? (12) AFTER all, nobody thinks that learning to ride a bike means losing the pleasure of running.

One intriguing aspect of handwriting is what, (13) IF anything, it tells you about a person. It has been suggested that it can reveal various personal qualities, and even someone's health and intelligence. While some feel this is (14) GOING too far, it is also true because every individual has a distinctive style, handwriting is, in (15) ALL probability, expressing something about them. However, studying handwriting is (16) NOWHERE near being accepted as a proper science.

READ THE TEXT BELOW. USE THE WORD GIVEN IN CAPITAL AT THE END OF SOME OF THE LINES TO FORM A WORD THAT FITS IN THE GAP IN THE SAME LINE. THERE IS AN EXAMPLE AT BEGINNING.

A STORY OF SCIENCE FICTION IN BRITAIN

There is little (0) AGREE as to the precise nature of science fiction. Thomas More's *Utopia*, published in 1516, bears some (17) RESEMBLANCE to modern science fiction with its depiction of a perfect society. But the genre only really became established in the nineteenth century, when unprecedented technological change inspired literature exploring the impact it had on society. Mary Shelley's *Frankenstein* was highly (18) INFLUENTIAL, with the image it portrayed of a mad scientist conducting strange experiments becoming popular and (19) ENDURING theme in science fiction.

The twentieth century saw the (20) EMERGENCE of what came to be another (21) CHARACTERISTIC of the genre – its use by writers to criticise contemporary society. Many of them struggled with the (22) UNDERLYING tension between the desire to be a (23) CONTROVERSIAL social and political (24) COMMENTATOR and the wish simply to tell an exciting story

FOR EACH QUESTION, COMPLETE THE SECOND SENTENCE SO THAT IT MEANS THE SAME AS THE FIRST.

DO NOT CHANGE THE WORD GIVEN.

YOU MUST USE BETWEEN THREE AND EIGHT WORDS, INCLUDING THE WORD GIVEN.

Example:

0 Do you mind if I watch you while you paint? **OBJECTION**
Do you _____ you while you paint?

HAVE ANY OBJECTION TO ME WATCHING

25 My home town is very different now from when I was a child. **RECOGNITION**
My home town _____ since I was a child.

HAS CHANGED / ALTERED BEYOND RECOGNITION

HAS CHANGED / ALTERED BEYOND ALL RECOGNITION

26 Rare species of butterfly could soon become extinct on account of the high levels of air pollution. **VERGE**
Rare species of butterfly are _____ to the high levels of air pollution.

ON THE VERGE OF EXTINCTION / DISAPPEARING DUE

27 I was disappointed that Lee didn't want to listen to any of my jokes. **MOOD**
To _____ for listening to any of my jokes.

MY DISAPPOINTMENT LEE WASN'T IN THE MOOD

28 The singer did not want to say anything about his future plans. **INDICATION**
The singer was unwilling _____ to his future plans.

TO GIVE THE LEAST / SLIGHTEST / ANY INDICATION AS

29 Simon is the only child who does not enjoy swimming. **EXCEPTION**
With _____ enjoy swimming.

THE EXCEPTION OF SIMON ALL THE CHILDREN

THE EXCEPTION OF SIMON ALL OF THE CHILDREN

30 Conservationists say that local wildlife will definitely be threatened by pollution from the new factory. **POSES**
Conservationists say that pollution from the new factory _____ local wildlife.

POSES A DEFINITE / CLEAR THREAT TO

POSES A DEFINITE / CLEAR THREAT TO THE

YOU ARE GOING TO READ AN EXTRACT FROM THE PREFACE TO A BOOK ABOUT SCIENCE. CHOOSE THE ANSWER WHICH YOU THINK FITS BEST ACCORDING TO THE TEXT.

THE ASCENT OF SCIENCE

At its most abstract, science shades into philosophy; at its most practical it cures disease. It has eased our lives and threatened our existence. It aspires, but in some very basic way fails, to understand the ant and the origins of the universe, the infinitesimal atom and the mind-boggling immensity of the cosmos. It has laid its hand on the shoulders of poets and politicians, philosophers and charlatans. Its beauty is often apparent only to the initiated, its perils are generally misunderstood, its importance has been both over and underestimated, and its fallibility, and that of those who create it, is often glossed over or malevolently exaggerated.

The attempt to establish the scientific universe has been characterized by perpetual conflict. Established theories have continually been modified or violently overthrown, and as in the history of music, innovations tend to be ridiculed only to become, in time, the new dogma. The struggle between old and new has rarely been dignified. Scientists come in many colors, of which the green of jealousy and the purple of rage are fashionable shades. The essence of scientific history has been conflict.

This book presents science as a series of ideas that changed the course not only of science itself but often of whole areas of human thought. Science, of course, has its practical benefits, but they will not be our primary concern. This is not a book about non-stick frying pans. We will be looking at ideas – admiring their beauty, occasionally standing awestruck before the towers of imagination, but always being prepared to doubt; always being aware not only of the ingenuity but also of the deep limitations, and the repeatedly demonstrable inertia, of the human mind.

Science, by its nature, is changeable. There is always some scientist, somewhere, who is disproving an explanation that another scientist has proposed. Usually these shifts of interpretation leave the fabric of society undisturbed. Occasionally, however, real revolutions tear down part of our system of established beliefs. Thus, in the seventeenth century, science presented us with a mechanical universe, a giant inexorable clock. Three centuries later, physics has questioned some basic assumptions, leading us into a shadowy maze where we affect the universe by the act of observing it and are ignorant of the true meaning of our most basic concepts.

Some see the fragility of scientific theory as an indication of a basic inability of science to explain the universe. But scientific change is almost always accompanied by an increase in our ability to rationalize and predict the course of nature. The seventeenth-century English scientist Isaac Newton could explain far more than the Ancient Greek polymath Aristotle, and Albert Einstein, the father of modern physics, more than Newton. Science frequently stumbles, but it gets up and carries on. The road is long. It is prudent to recall that at the end of the nineteenth century the general opinion amongst physicists was that nothing of any great import remained to be done in physics. And then came radioactivity, X-rays, the discovery of the electron and the nucleus, a couple of hundred new fundamental particles, quantum mechanics and relativity, antimatter, dark matter, black holes, chaos, the Big Bang, and so on. Biology has been no less prolific. At present, there are again voices proclaiming the imminent arrival of a theory of everything, a complete explanation of the origins of the universe and workings of the cosmos. Maybe science is not a harmless intellectual pastime.

In the last two centuries we have moved from being simply observers of nature to being, in a modest but growing way, its controllers. Concomitantly, we have occasionally disturbed the balance of nature in ways that we did not always understand. Science has to be watched. Non-scientists can no longer afford to stand to one side, ignorant of the meaning of advances that will determine the kind of world that their children will inhabit – and the kind of children that they will have. Science has become part of the human race's way of conceiving of and manipulating its future. The manipulation of the future is not a question to be left to philosophers. The answers can affect the national budget, the health of your next child – even the long-term prospects for life on this planet.

31 WHAT IS THE WRITER'S MAIN PURPOSE IN THE FIRST PARAGRAPH?

- A to defend science against its detractors
- B to emphasise the practical benefits of science
- C to outline the inherent contradictions of scientific enquiry
- D to call for a more interdisciplinary approach to science

32 THE WRITER REFERS TO MUSIC AND SCIENCE TO MAKE THE POINT THAT IN BOTH DISCIPLINES

- A new ideas are rarely accepted immediately.
- B there is resistance to traditional practices has been lost.
- C respect is intense rivalry among practitioners.
- D controversies are essential for progress.

33 IN THE THIRD PARAGRAPH, THE WRITER SAYS THAT WHEN APPRECIATING THE BEAUTY OF SCIENTIFIC IDEAS, IT IS IMPORTANT TO

- A maintain a critical perspective.
- B reflect on their wider significance.
- C disregard their real-life application.
- D put each one in its historical context.

34 WHAT DOES THE WRITER SUGGEST ABOUT SCIENCE IN THE FOURTH PARAGRAPH?

- A Its practitioners are reluctant to collaborate on research projects.
- B There is less certainty about it than in some previous eras.
- C Its practitioners are unwilling to tackle deeper questions about the universe.
- D There is a reduced role for it in today's society.

35 WHAT DOES THE WRITER SAY ABOUT SCIENTIFIC ENQUIRY IN THE FIFTH PARAGRAPH?

- A It goes through periods when it merely repeats itself.
- B Its weaknesses have led to a loss of faith in scientists.
- C Its proponents current optimism is unfounded.
- D It is still capable of yielding important insights.

36 THE WRITER ARGUES THAT NON-SPECIALISTS ARE TO

- A recognise that investment in science is a priority.
- B take responsibility for increasing their knowledge of science.
- C be more tolerant of scientific errors.
- D ensure that scientists are accountable to the public.

YOU ARE GOING TO READ AN ARTICLE ABOUT AN ANIMAL TRAINER. SEVEN PARAGRAPHS HAVE BEEN REMOVED FROM THE ARTICLE. CHOOSE FROM THE EXTRA PARAGRAPHS A – H THE ONE WHICH FITS EACH GAP (37 – 43). THERE IS ONE EXTRA PARAGRAPH WHICH YOU DO NOT NEED TO USE.

Andrew Simpson: the wolf whisperer

One of the world's foremost animal trainers prepares a pack of wolves to star in an epic Chinese film

Ten pairs of dark eyes stare out from behind a 4m-high fence on the northern outskirts of Beijing. The pack looks relaxed, until they hear the sounds of the car. At once, their ears prick up, their noses tilted towards the noise. 'They never really sleep while the sun is up,' says Andrew Simpson, a 45-year-old Scot who has spent his life training wolves. Simpson is in China for his greatest challenge yet. He has 18 months to get a pack of wolves to sit, snarl and fight on cue in order to take part in the film of one of China's most famous novels, the multimillion bestseller *Wolf Totem*.

37 (G)

Plans for a film of *Wolf Totem* have been afoot since 2004, at first using all-digital wolves. But when director Jean-Jacques Annaud was brought on board, he insisted that the animals in the movie should be a genuine pack. China's dwindling wolf population are not allowed to leave the country; their trainer, then, would have to come to them. 'When we first started talking about *Wolf Totem* I didn't realise I might have to commit two or three years of my life to it,' says Simpson, who has moved here from his ranch in rural Canada.

38 (B)

There is not much sign of danger. He immediately presents his tummy for a rub. 'Tickle him,' urges Simpson. 'It's part of the process.' The fur is bristly, and his body is tight and strong. It turns out he is on a reconnaissance mission. After covering himself in our scent, he gets up and saunters back to the rest of the pack. One by one, they have a sniff, deciding whether to accept us into the fold or not.

39 (E)

It's a different story in captivity though. At one point, Simpson breaks off several branches from a nearby tree and begins to wave one under the nose of one of the wolves, until the wolf clamps its jaws tightly around it. A tug of war follows until the wolf manages to grab the branch and retreats victoriously. The rest of the pack is now running wildly, hopping to join the game.

40 (C)

Today, though, he is having trouble just getting his wolves to stand still. Each day, the pack is put through its training for at least an hour. It takes about a month to persuade a wolf to get 'on your mark' – in the position required – a command that is accompanied with a wave of the hand and, if successful, a reward.

41 (H)

Getting a wolf to snarl on cue is also time-consuming. A large bone is first gently, then more aggressively, taken away from a hungry wolf until he bares his fangs. And, although Simpson and his six-man team, brought in from Calgary, have been working with the pack from when they were just a few weeks old, only three of the wolves, Cloudy, Silver and Parker, will allow such close human contact.

42 (F)

Simpson admits the unique bond with those wolves, with whom he has spent many years, stems from a near-parental commitment to their wellbeing. 'You must give yourself completely to raising wolves and building a bond with them. Most people try to raise wolves by spending a few hours a week with them. This approach never works. You need to understand how their pack structure works and then slot yourself into their lives.'

43 (A)

And with that, he leads the pack in a howl. As he throws his head back, the wolves around him begin to yelp, and then one or two muster a more full-throated cry. It is not yet the blood-curdling call of the wild that runs through *Wolf Totem*, but they'll get there.

A Achieving such complete integration may mean sleepless nights feeding baby wolves or sitting outside in a thunderstorm comforting them because they are afraid, or travelling in an aircraft hold with them – all things he has done in his time. 'What I really hope is that the movie will change people's perceptions of wolves,' he says. 'They are really wonderful creatures. Challenging, but clever and capable.'

B Simpson slides the outer fence open, and we slip into the compound. He calls out to Cloudy, the alpha male of the pack. The wolf pads over, and I freeze. 'Let the wolves see you here with me for a moment. Stay close to me and they will not mind you,' he says.

C Before coming to China, Simpson was employed in Vancouver by a couple who trained animals for films. At the time, no one was focused solely on wolves. Working with these animals was a gamble, but it was what he wanted to do. Now, according to Annaud, Simpson is the 'finest wolf trainer in the world'.

D One of the first animals he worked with then was a wolf/dog crossbreed. He was told the dog had been a problem on the set, but after a few weeks he was walking with the dog off the leash. 'I guess back then I didn't know any better,' he says. 'I just did what I could and it worked.'

E Chinese wolves like these are more slender than their American or Indian cousins, with longer ears and narrower heads. They are built for speed. But despite their veneration in *Wolf Totem*, in the wild they are 'pretty terrible hunters', according to Simpson. 'Nine out of 10 times, a wolf will fail to catch his prey.'

F 'That is the real crux of the challenge,' says Simpson. 'I am used to working with wolves whose parents were born in captivity, but for *Wolf Totem*, this was not possible. I would have loved to ship my already-trained wolves from Canada, but they were not right for this project,' he adds.

G But, as its narrator warns: 'You can tame a bear, a lion or an elephant, but you cannot tame a wolf.' Simpson is inclined to agree. 'It is not possible to get a wolf to do something he or she does not want to do. If they do not enjoy it, they will not work.'

H Food undoubtedly works best for this purpose. Your normal diet is dried dog food, but here, they get fresh meat. 'If you overfeed a wolf, they have had it. They will wander off and not train for days. That can be a bit tricky with a movie's schedule.'

YOU ARE GOING TO READ EXTRACTS FROM AN ARTICLE ABOUT HOW PEOPLE FIND CREATIVE INSPIRATION. FOR QUESTIONS 44 – 53, CHOOSE FROM THE PEOPLE (A – E). THE PEOPLE MAY BE CHOSEN MORE THAN ONCE.

WHICH PERSON

44 says that creative people need periods of mental inactivity? (E)

45 says a commonly held belief about creativity is mistaken? (C)

46 encourages creative people to make spontaneous decisions where necessary? (E)

47 says that finding inspiration is a gradual process? (B)

48 says creative people need to contain their sense of insecurity? (C)

49 mentions making direct use of part of someone else's work? (A)

50 mentions the need to persevere regardless of one's mood? (C)

51 says some of the themes in her work reflect the situation she finds herself in? (D)

52 finds value in creating what she regards as substandard pieces of work? (E)

53 discusses the benefits of limiting the preparation time for a piece of work? (B)

Unleashing your inner genius

Creative people reveal how they find inspiration

A) Sally Jones, playwright

I'm a very aural person; as soon as I hear certain phrases in a song, I'm transported to a particular time and place. When I was writing my play *Body Parts*, I listened to *Love Her Madly* by the American rock band The Doors, which seemed to suggest a lot about my characters' relationships with each other. A line from one of their songs even made it into the play's plotline. I'm also very fidgety and seem to work best when my hands are occupied with something other than what I'm thinking about. During rehearsals, for example, I find myself drawing little pictures or symbols that are somehow connected to the play. Then I'll look back at my doodles, and random snatches of dialogue for another play will occur to me. Another thing I do is to go to the forest near my house to think through a character or situation. It works every time.

B) Rachel Carter, ballet dancer

Ideas sit inside me for a while, before they emerge. When I'm preparing for a particular character, I keep looking for ideas about her wherever I can – in film, theatre, music, and in watching other ballet companies. When I first danced the French ballet *Giselle*, I found the Danish director Lars von Trier's film *Dancer in the Dark* incredibly inspiring. It was so dark, and it felt just like a modern-day version of the ballet – it brought the part alive for me. I believe that to be truly inspired you must learn to trust your instinct. In my profession, I feel that you shouldn't over-rehearse a part, or you'll find you get bored with it. Of course, hard work is important, but a good, technically correct performance without instinct will never be magical.

C) Sarah Kent, musician

For me, the image of the tortured artist is a myth – you don't need to be miserable to write songs. In fact, if I am feeling down, the last thing I want to do is write; although it's important sometimes just to sit down and get on with it, however you're feeling. Your creativity is like a tap: if you don't use it, it gets clogged up. One of the most difficult things about writing music is the sheer number of distractions. When you're writing, you have to be very disciplined, to the point of being impolite: turn off your phone and avoid seeing other people. Another thing you have to deal with is that small voice that tells us we're rubbish. We need to know how to silence it. I try to avoid listening to records by other musicians while I'm writing something – comparing myself to others often makes me think, 'Why do I bother?'

D) Margaret McCall, singer-songwriter

I definitely don't have rules – I'm pretty disorganised. In fact, I often have to guilt-trip myself into sitting down to write. It is so easy to let your life get filled up with other stuff – going to the bank, looking after the baby. These things do come through in my songwriting, though. Most of my songs are defined by a sense of loneliness, of isolation, that I get from spending a lot of time on my own. When I first moved to New York, I used to go to concerts every night. Now that I'm a songwriter myself, I find watching other musicians can be frustrating – I want to be the one up there performing. But every so often I see someone who inspires me to try something different. I go home thinking: 'I should really try something like that.'

E) Judith Keane, artist

I've learned not to wait for a good idea to come to me. It's best to start by realising an average idea – remember, no one has to see it. If I hadn't made the works I'm ashamed of, the ones I'm proud of probably wouldn't exist. Also remember that hard work isn't always productive. I think of the brain as a field lying fallow; keep harvesting and the crops won't mature. Not restricting yourself to your own medium is also important. It is just as possible to be inspired by a film-maker, fashion designer, writer or friend as by another artist. Cross-pollination makes for an interesting outcome. Finally, don't be afraid to scrap all your hard work and planning and do it differently at the last minute.