

G R A M M A R

Read the text below and fill in gaps 1–15 with ONE suitable word. The words to be filled in have to be words with some grammatical function (e.g. auxiliary verbs, articles, pronouns, prepositions, conjunctions, etc.). There is an example at the beginning (00).

Why (00) do people find amusement park rides so (1) _____ fun? The roller coasters, free-fall, and pendulum rides are exhilarating, if (2) _____ terrifying. Think for a moment (3) _____ how the motion of a ride heightens our senses. The roller coaster creeps to the top of a hill slowly. Anticipation builds. As it crests the hill, the car seems suspended for a moment before it thunders down and the car and rider (4) _____ falling fast. It feels (5) _____ we might fly out of the car if not for the safety restraints. The boat ride that swings like a pendulum looks harmless, but (6) _____ it swings higher and higher in its arc, the rider comes off his or her seat. We pause suspended in mid-air just long enough to make our stomach flutter.

Believe it or (7) _____, science explains the thrills we experience on the roller coaster and other funfair rides. An amusement park is a great place to study motion and forces, and something different, called microgravity. Amusement park rides provide brief glimpses of (8) _____ astronauts experience in the microgravity of orbit – a sense of weightlessness. While the gravitational pull in an amusement park (9) _____ not change from place to place, you will experience a sensation of feeling heavier, lighter, even weightless, on some rides.

Amusement park rides are exciting (10) _____ of a common element that they all share. What do merry-go-rounds, Ferris wheels, flume rides, and bumper cars have (11) _____ common? All these rides have motion. What (12) _____ a roller coaster be without motion? It is the motion of a ride that can move us in (13) _____ a way that we feel heavy, as if gravity had become stronger. The motion can also let us fall for a second or more, making (14) _____ feel light or weightless. Motion (15) _____ change the effect that gravity has on our bodies enough to create a microgravity environment.

1 point/correct answer

Total: _____ / 15 pts

V O C A B U L A R Y**A. Complete the sentences with the correct word from the box. Each word can be used just once.**

signpost	assignment	significance	designation	signatory	resignation
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- Mary is in Greece on _____ for one of the Sunday newspapers.
- Mr Simpson's official _____ is Financial Controller.
- The new drug has great _____ for the treatment of the disease.
- Surrounded by police officers, the bank robber lowered his gun as a sign of _____.
- A chapter's heading is a useful _____ to the content of a book.
- Thomas Jefferson was a _____ on the Declaration of Independence along with several other signers, including George Washington and John Hancock.

B. Read the sentences and circle the correct answer.

- (In a crowded train) 'Excuse me! Can I just _____ past? Thank you.'
A) twist B) crush C) crawl D) squeeze
- We _____ the tomatoes when they were ripe.
A) tore B) planted C) picked D) hoed
- There were twenty people in the lift. I was nearly _____ to death.
A) crushed B) spread C) rubbed D) torn
- 'How do I get the top off the lemonade bottle?' '_____ it.'
A) Flog B) Twist C) Chop D) Pour

1 point/correct answer**Total: _____ / 10 pts**

R E A D I N G C O M P R E H E N S I O N

Read the text carefully and complete the two tasks given.

Why do we sleep?

“The only known function of sleep is to cure sleepiness,” Harvard sleep scientist Dr J. Allan Hobson once joked. This isn’t quite true, but the questions of why we spend about a third of our lives asleep and what goes on in our head during this time are far from being solved.

One big mystery is why sleep emerged as an evolutionary strategy. It must **confer** powerful benefits to balance out the substantial risks, such as being eaten or missing out on food while lying **dormant**. The emerging picture from research is that sleep is not a luxury but essential to both physical and mental health.

How much sleep is enough?

Eight hours is often quoted, but the optimum sleeping time varies between people and at different times of life. The ideal amount to sleep is seven to nine hours for adults, and eight to ten hours for teenagers. Younger children require much more, with new-born babies needing up to seventeen hours each day (often not aligned with the parental sleep cycle).

Why are we stuck on this 24-hour cycle?

In the 1970s scientists uncovered a **crucial** piece of machinery for this internal molecular timekeeping. In experiments using fruit flies, they found a gene, later given the name “period”, whose activity appeared to reliably rise and fall on a 24-hour cycle. Scientists, two of whom received Nobel Prizes in 2017, later showed that the period gene worked by releasing a protein that built up in cells overnight, before being broken down in the daytime.

Did we sleep more soundly in the past?

Poor sleep is often seen as a modern problem, a **blight** of sedentary lifestyles and being glued to smartphones late into the night. However, research into the sleep patterns of modern-day hunter-gatherers suggests this may paint an overly romantic view of the past. One study, of the Hadza people in northern Tanzania, found frequent night-time waking and widely differing sleep schedules between individuals. Over a three-week period, there were only 18 minutes when all 33 tribe members were asleep simultaneously. The scientists behind the work concluded that fitful sleep could be an ancient survival mechanism designed to guard against nocturnal threats.

What happens when you don’t get enough sleep?

In extreme cases, sleep deprivation can be fatal. Rats that are completely deprived of sleep die within two or three weeks. This experiment hasn’t been repeated in humans – obviously – but even a day or two of sleep deprivation can cause otherwise healthy people to suffer hallucinations and physical symptoms. After a poor night’s sleep, cognitive abilities take an immediate hit.

READING COMPREHENSION - continued

Concentration and memory are noticeably affected and people are more likely to be impulsive and favour instant **gratification** over waiting for a better outcome. We are also worse people when we're tired – one study found that sleep-deprived people are more likely to cheat and lie.

What about physical health?

Cumulative lack of sleep can have long-term health consequences, and links are seen with obesity, diabetes, heart disease and dementia. The reasons for some of these associations are complex and hard to separate from other lifestyle factors. Sleep deprivation has been shown **to alter** the body's basic metabolism and the balance between fat and muscle mass.

Do all animals sleep?

The answer partly depends on what counts as sleep. There are animals that require little sleep: adult giraffes rarely sleep for more than five minutes at a time, while the little black bat is thought to sleep for 19 hours each day. Dolphins have the ability to put only half their brains to sleep at a time, known as unihemispheric sleep. Migratory birds are thought to sleep-fly and sharks sleep-swim.

A. According to what you have read, are these statements true, false or not stated? Circle the correct answer.

1. T / F / NS People spend about 30% of their lives asleep.
2. T / F / NS Sleeping lightly could be a way to conquer threats at night.
3. T / F / NS No health consequences of sleep deprivation have been discovered so far.
4. T / F / NS Amphibians tend to sleep more than mammals.

B. Circle the best synonym (a, b, c or d) for each of the words below as they are used in the article. For better understanding of context, the words are written in bold there.

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|----------------------|-----------------|-------------|---------------|----------------|
| 5. to confer (v) | A) to reveal | B) to grant | C) to wield | D) to withdraw |
| 6. dormant (adj) | A) careful | B) infirm | C) patient | D) idle |
| 7. crucial (adj) | A) vital | B) nominal | C) optional | D) generic |
| 8. blight (n) | A) affliction | B) blessing | C) victory | D) advantage |
| 9. gratification (n) | A) satisfaction | B) sorrow | C) perfection | D) penance |
| 10. to alter (v) | A) to replace | B) to allot | C) to change | D) to preserve |

1 point/correct answer

Total: _____ / 10 pts

L I S T E N I N G C O M P R E H E N S I O N

You will hear some information about Greenland. Listen carefully and then complete the sentences (only one word is missing in each sentence). You will hear the text twice.

1. The south coast of Greenland is its _____ part.
2. Erik's bad _____ might have been the cause for his name, 'Erik the Red'.
3. Erik came to Greenland from _____.
4. The reason why Erik wanted Icelanders to join him was that he felt _____ and lonely.
5. Greenlanders built houses that were snug and strong from stone, wood and _____.

1 point/correct answer

Total: _____ / 5 pts

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