

IELTS PRACTICE TASK

Rising seas

As the planet warms, the sea rises. Coastlines flood. What will we protect? What will we abandon?

How will we face the danger of rising seas?

An extremely altered planet is what our fossil-fuel-driven civilization is creating, a planet where massive flooding will become more common and more destructive for the world's coastal cities. By releasing carbon dioxide and other heat-trapping gases into the atmosphere, we have warmed the Earth by more than a full degree Fahrenheit over the past century and raised sea level by about eight inches. This warming of our planet affects sea level in two ways. About a third of its rise comes from thermal expansion – from the fact that water grows in volume as it warms. The rest comes from the melting of ice on land. So far it's been mostly mountain glaciers, but for the future the big concern is the giant ice sheets in Greenland and Antarctica. These areas combined have lost on average about 50 cubic miles of ice each year since 1992. Many think sea level will be at least three feet higher than today by 2100. Even that figure might be too low.

Coastal cities now face a twin threat: rising oceans will gradually flood low-lying areas, and higher seas will extend the destructive reach of storm surges. Using a conservative prediction of a half meter (20 inches) of sea-level rise, the Organisation for Economic Co-operation and Development (OECD) estimates that by 2070, 150 million inhabitants of the world's large port cities will be at risk from coastal flooding, along with \$35 trillion worth of property, an amount that will equal 9 % of the global GDP. How will they cope?

Malcolm Bowman, a physical oceanographer at the State University of New York, has been trying for years to persuade anyone who will listen that New York City needs greater protection from flooding. He proposes two barriers: one constructed at Throgs Neck, to keep floods from Long Island Sound out of the East River, and a second one spanning the harbor south of the city. Gates would be adjusted for ships and tides, closing only during storms. Another way to safeguard New York might be to revive a bit of its past, according to landscape architect Kate Orff. She explains how the islands and shallows along the coastline vanished long ago, demolished by harbor-dredging and landfill projects that added new real estate to a growing city. Orff suggests that throughout the harbor, there would be dozens of artificial reefs built from stone, rope, and wood pilings and seeded with oysters and other shellfish. These would continue to grow as sea levels rose, helping to lessen the impact of storm waves – and the shellfish, being filter feeders, would also help clean the harbor. '25 % of New York Harbor used to be oyster beds,' Orff says.

TASK TYPE 8 Sentence Completion

The Netherlands has taken other approaches to the issue of flooding. In Rotterdam, Arnoud Molenaar is the manager of the city's Climate Proof program, which aims to make Rotterdam resistant to future sea levels. He describes the assorted flood-control structures that have been constructed there, including an underground car park designed to hold 10,000 cubic meters – more than 2.5 million gallons – of rainwater. He also mentions Rotterdam's Floating Pavilion, a group of three connected, transparent domes on a platform in a harbor off the Meuse river. These are about three storeys tall, and made of a plastic that's a hundred times as light as glass. Though used for meetings and exhibitions, their main purpose is to demonstrate the wide potential of floating urban architecture. By 2040 the city anticipates that as many as 1,200 homes will float in the harbor.

Among the most vulnerable low-lying cities in the U.S. is Miami in the state of Florida. There is no obvious engineering solution to flooding on this peninsula as it sits on top of a foundation of highly porous limestone – meaning that sea water just flows through the foundation, gradually eroding it. Even now, during unusually high tides, seawater spouts from sewers in Miami Beach, Fort Lauderdale, and other cities, flooding streets. In a state exposed to hurricanes as well as rising seas, people like John Van Leer, an oceanographer at the University of Miami, worry that one day they will no longer be able acquire insurance for their houses. 'If buyers can't insure it, they can't get a mortgage on it. And if they can't get a mortgage, you can only sell to cash buyers,' Van Leer says. 'What I'm looking for is a climate-change denier with a lot of money.'

Questions 1–8

Complete the sentences below.

Choose **NO MORE THAN TWO WORDS** from the passage for each answer.

- 1 The process of is one reason why sea levels are rising.
- 2 In the future, it is the water released from enormous that may contribute most to rising sea levels.
- 3 The OECD is concerned about the impact of flooding on coastline, as well as people living in port cities.
- 4 Malcolm Bowman has proposed erecting some to reduce the effects of flooding in New York City.
- 5 Kate Orff believes that would prevent flooding and lead to a cleaner harbour.
- 6 In Rotterdam, rainwater can be contained in a massive built below ground level.
- 7 Plastic in Rotterdam give an idea of how flood-proof buildings could be designed.
- 8 In Miami, people may no longer be able to get house , which limits the number of potential buyers.

IELTS PRACTICE TASK

The history of colour

How the invention of synthetic colour changed our world

Today, in the urban centres of the 21st century, we are surrounded by a vast spectrum of colours that once only occurred within the natural world. We now take it for granted that the products that we buy and the packaging they are presented in will be available in our preferred shade or tone.

Colourful man-made objects have become so ubiquitous that it requires a stretch of the imagination to conceive of a time when such a range did not exist, but until the mid-19th century, this was indeed the case.

It was the ancient civilizations of China, Rome, Persia, India and Egypt where the craft of dyeing fabric was developed; an often complicated and labour-intensive process. Dyes that were derived from vegetables were usually cheaper and more easily obtainable than ones derived from animals. The roots of a plant called madder were used to create a strong red colour, and the leaves of the indigo shrub produced a colour between blue and violet. Saffron and turmeric plants, now used to colour and flavour food, once created yellow and orange hues for cloth. Because of the scarcity of certain sources or the complexity of production, some colours were only worn by very wealthy people or royalty, for example, purple which originated in the Mediterranean and was a dye created from the secretions of sea snails; and black, coming from oak or chestnut wood, which indicated high status in 14th century Europe. In the 15th century, South America began exporting large quantities of a dye called carmine to Europe; this deep crimson-red colour was derived from the crushed bodies and eggs of the cochineal beetle. Carmine remains a major component of food colouring and cosmetics even now.

Although dyeing methods had evolved over the millennia, the use of natural sources would always be impractical; there was no guarantee that the colour of dyed material would be consistent or that the material, when exposed to the sun, would not suffer from fading over a period of time.

Furthermore, it would often take months to produce a relatively small quantity of fabric, an insufficient supply for growing populations. In the 19th century, the expanding European textile industry created a need for larger quantities of cheaper and more adaptable dyes. It was a young English chemist, William Henry Perkin, who responded to this need, quite by accident. In 1856, he was experimenting in his laboratory, with the aim of synthesising the drug quinine, used to help people suffering from malaria. One of the chemical compounds he was testing was aniline. From this, he obtained a black solid, and then isolated a dye that could colour silk purple. The dyed silk did not fade in the sun and did not wash out. Perkin had thus created the first synthetic dye. He built a factory to manufacture the dye on an industrial scale, and developed a technique to apply the dye to cotton materials that could be made into dresses and accessories.

TASK TYPE 9 Summary Completion (1)

The new colour, which Perkins named 'Aniline Purple', quickly became fashionable and much in demand, both in Britain and overseas. Due to its growing reputation in France, Perkins made a sensible marketing decision and changed the name to 'mauve', after the French word for the purple mallow flower. Perkin's discovery not only inspired other scientists and researchers to experiment with synthetic colours, but also demonstrated to manufacturers that colour novelty could be used to attract customers. Now, when it comes to establishing a brand, it is often the use of colour or a colour combination that speaks to potential buyers, and it is colour which often determines consumer choice.

Questions 1–8

Complete the summary below.

Choose **ONE WORD ONLY** from the passage for each answer.

Write your answers **1–8** below.

Summary

The craft of dyeing has been practised since ancient times. Early civilizations found it was more difficult to get dyes from 1 than from plants, and so it was plants that they tended to rely on, sometimes using roots but also the 2 , depending on the species, and whether they wanted red, blue, yellow or orange dye. Some colours were traditionally worn only by 3 or the very rich, such as purple and black. By the 15th century, a crimson-red dye, which is still used in 4 and to add colour to food products, was imported by Europe from South America. However, there were various problems with using natural sources; it was never certain that the exact same colour would appear in dyed material; gradual 5 was likely to occur, and quantities of the dyed material were never enough to meet demand. Fortunately, in 1856, while chemist William Henry Perkin was attempting to find a way of treating 6 , he accidentally discovered that a purple dye can be obtained from the chemical aniline. His purple-dyed fabrics made of 7 quickly became popular, and he ended up calling his synthesized colour 'mauve'. Companies now rely heavily on colour to make their 8 known to people, and to persuade them to buy.

IELTS PRACTICE TASK

The amazing brains of babies

Recent scientific techniques have challenged our beliefs about the way that babies think.

In the past three decades remarkable discoveries have been made about the way babies think and the development of their brains. It was previously thought in the scientific community that babies and young children were amoral and therefore unable to understand the perspective of other people, and that they were also quite irrational; unable to make sense of the world around them. However, new scientific techniques have proved otherwise. From an evolutionary point of view, one of the most fascinating things about humans is that they take a very long time to develop all the skills and knowledge required to survive independently of their parent. In other words, humans experience a far longer childhood than any other species. Nevertheless, this does, in fact, benefit them in the long run.

Of course, the young of some animal species can fend for themselves within hours or days of being born. Known as 'precocial' species, these animals enter the world with specific innate capabilities that allow them to survive in a particular set of environmental circumstances. They can move with agility, search for food, and avoid predators intuitively – without conscious thought. In other words, they just *know* what to do. 'Altricial' species behave rather differently. They must learn how to co-ordinate their limbs, need feeding by their parents, and must be protected from enemies. But while all this is happening, learning is still occurring in their very flexible brains. Neurons, or nerve cells as they are also known, are the cells in the brain that process and transmit information through electrical and chemical signals. These signals between neurons happen via synapses, specialized connections with other cells. It is now known that the brains of babies have many more connections between neurons than adults. The area of the brain called the prefrontal cortex takes a particularly long time to develop, however. In an adult, this region allows a person to focus on achieving internal goals, and to work out which actions are most likely to achieve them quickly and effectively. It is also the area which allows a person to control their feelings and moderate their social behaviour. On the surface, therefore, it may seem that the slow development of the prefrontal cortex is a disadvantage, but actually it may aid the process of learning. The prefrontal cortex also restricts irrelevant thoughts or behaviours, and in a baby, because they are uninhibited in this way, it may encourage them to explore freely and learn flexibly, giving them an eventual advantage over other species.

What are the implications of this for the way we raise our young children? Science has certainly demonstrated how vitally important a child's early years are, and some policy makers have responded to this by insisting on the establishment of early education programmes and continual testing. Many parents are also anxious to give their children a head start by enrolling them in extra classes and paying for out-of-school tuition. Yet science suggests that children learn best from normal daily interaction with other people and things, and from playful exploration of their environment within a safe setting. This is when all those neurons get excited the most.

TASK TYPE 10 Summary Completion (2)

Questions 1–6

Complete the summary using the list of words, **A–I**, below.

Write the correct letter, **A–I**, below.

How babies think

Thirty years ago, scientists believed that human babies lacked **1** and had no sense of right and wrong. Today the common belief is quite different. Scientists have realised that human babies' period of **2** has an evolutionary advantage. Unlike precocial species which are born with **3** , humans belong to altricial species which rely on gradual learning to function well as adults. In humans, the prefrontal cortex, responsible for efficient action and **4** , takes a particularly long time to develop. This slow development of the prefrontal cortex, however, allows **5** in babies instead. What some scientists have concluded, is that the most effective learning in young children occurs when they take part in as many **6** as possible.

A emotional balance

B academic situations

C instinctive abilities

D communication strategies

E basic logic

F everyday experiences

G extended immaturity

H creative thinking

I intellectual development