A Beginner's Guide to Home Composting

Read the text and write if the statements are TRUE, FALSE or NOT GIVEN.

Composting is one of the simplest ways to reduce household waste and improve your garden at the same time. When food scraps and garden clippings are thrown away with ordinary rubbish, they end up in landfill sites, where they rot slowly and release gases that are harmful to the environment. Composting at home turns that same material into a dark, crumbly substance that gardeners often call black gold. It costs almost nothing to start, and it can make a real difference to the health of your plants.

Getting started does not require special equipment. Many people use a simple open heap in a corner of the garden, while others prefer a closed bin that keeps the contents tidy and warm. A closed bin is a good choice if you have a small space or if you want to keep animals away from the pile. Whatever container you choose, it should sit directly on bare soil so that worms and other helpful creatures can move up into the compost from below.

The secret to good compost is balance. Gardeners usually talk about two kinds of material: greens and browns. Greens are soft, moist things such as vegetable peelings, grass cuttings and coffee grounds, and they are rich in nitrogen. Browns are dry materials such as dead leaves, cardboard and small twigs, and they provide carbon. A healthy heap needs roughly equal amounts of each. Too many greens will make the pile wet and smelly, while too many browns will cause it to break down very slowly.

Some items should never go into a home compost bin. Meat, fish and dairy products can attract rats and other pests, and they tend to produce unpleasant smells as they decay. Cooked food and oily leftovers cause similar problems. It is also wise to avoid adding the roots of persistent weeds or any plant that is clearly diseased, because a home heap rarely gets hot enough to destroy them.

Once your bin is set up, a little regular care will speed things along. Turning the heap with a fork every couple of weeks lets air reach the centre, and the tiny organisms doing the work need that air to survive. If the pile looks dry, add a little water; if it seems soggy, mix in more browns. In warm weather the process is faster, and a well-managed heap can produce usable compost in a few months.

You will know the compost is ready when it looks dark and crumbly and smells pleasantly of damp earth rather than of rotting food. At that point you can spread it over flower beds, dig it into vegetable patches, or mix it into pots to give seedlings a healthy start. By turning kitchen and garden waste into something so useful, home composting closes a natural loop and rewards a small amount of effort with richer soil and stronger plants.

LIVEWORKSHEETS

A Short History of Tea

Read the text and write if the statements are TRUE, FALSE or NOT GIVEN.

Tea is one of the most widely consumed drinks in the world, second only to water in many estimations, yet its origins lie in a single plant and a long history of cultivation and trade. All true tea, whether green, black or oolong, is produced from the leaves of Camellia sinensis, an evergreen shrub native to parts of East and South Asia. The differences between the various kinds of tea arise not from different plants but from how the harvested leaves are treated after picking, particularly the extent to which they are allowed to oxidise before being dried.

According to a well-known Chinese legend, tea was discovered by the mythical emperor Shen Nong, who is said to have been boiling water when leaves from a nearby bush drifted into his pot, producing a fragrant and refreshing drink. Such stories are charming but cannot be treated as history, and the true beginnings of tea drinking are lost in the distant past. What is reasonably certain is that tea was being consumed in China long before it became known elsewhere, and that over many centuries it developed from a medicinal preparation into an everyday beverage enjoyed for its taste. In its early use, tea was valued for its supposed benefits to health and alertness, and only gradually did the pleasure of drinking it come to matter as much as any medicinal effect. This slow change in the way tea was regarded helped to turn it from a rare remedy into a drink woven into ordinary daily life.

By the time of the Tang dynasty, tea had become firmly established in Chinese culture, and it was during this period that the scholar Lu Yu composed a famous work devoted entirely to the subject. This book described the cultivation of the plant, the preparation of the drink and the equipment involved, and it helped to raise tea drinking to the level of a refined art. From China the custom spread to neighbouring regions, and it took particularly deep root in Japan, where Buddhist monks are thought to have carried tea seeds and drinking practices back from their travels. In Japan the preparation and serving of tea eventually developed into an elaborate and highly ritualised ceremony.

Tea remained largely unknown in Europe until comparatively recent times. It was European traders operating in Asia who first brought the leaf westward, and Dutch merchants are generally credited with being among the earliest to import it in significant quantities during the seventeenth century. At first tea was an expensive luxury available only to the wealthy, and it was regarded by some as an exotic novelty of doubtful value. Gradually, however, it gained acceptance, and in Britain in particular it would become extraordinarily popular, eventually being regarded as a national drink.

The growing British appetite for tea had far-reaching consequences that extended well beyond the dining table. For a long period almost all the tea consumed in Britain was purchased from China, and this trade created serious economic and political tensions. In an effort to reduce their dependence on Chinese supplies, the British sought to grow tea within their own empire, and large plantations were established in parts of India, notably in the Assam region, where a variety of the plant suited to the local conditions was cultivated. These developments transformed India into one of the world's major tea-producing countries, and the plantations there were worked by large numbers of labourers under conditions that were often extremely harsh. The organisation of this industry on such a scale showed how a simple domestic habit in one country could reshape agriculture and society in another, thousands of miles away.

The way tea was prepared and enjoyed varied considerably from one society to another. In Britain the practice of adding milk became common, and an afternoon meal centred on tea, accompanied by light food, developed into a recognised social occasion. In other parts of the world tea was drunk plain, or flavoured with spices, or prepared in strong and heavily sweetened forms. These differing customs reflect the way in which a single imported product could be absorbed into local tastes and traditions, taking on a distinct character in each place it reached.

Today tea is grown in many countries with suitable climates, including China, India, Sri Lanka, Kenya and others, and it supports the livelihoods of enormous numbers of people involved in its cultivation and processing. The plant generally thrives in warm regions with plentiful rainfall, and the finest teas are often associated with cooler, higher-altitude areas where the leaves grow more slowly. From its uncertain and legendary beginnings, tea has become a genuinely global commodity, woven into the daily routines and social rituals of societies across the world.

LIVEWORKSHEETS

Coal and Pollution

Read the text and write if the statements are TRUE, FALSE or NOT GIVEN.

A) Coal is expected to continue to account for almost 27 per cent of the world's energy needs. However, with growins international awareness of pressures on the environment and the need to achieve sustainable development of energy resources, the way in which the resource is extracted, transported and used is critical. A wide range of pollution control devices and practices is in place at most modern mines and significant resources are spent on rehabilitating mined land. In addition, major research and development programmes are being devoted to lifting efficiencies and reducing emissions of greenhouse gases during coal consumption. Such measures are helping coal to maintain its status as a major supplier of the world's energy needs.

B) The coal industry has been targeted by its critics as a significant contributor to the greenhouse effect. However, the greenhouse effect is a natural phenomenon involving the increase in global surface temperature due to the presence of greenhouse gases – water vapour, carbon dioxide, tropospheric ozone, methane and nitrous oxide – in the atmosphere. Without the greenhouse effect, the earth's average surface temperature would be 33-35 degrees C lower, or -15 degrees C. Life on earth, as we know it today, would not be possible.

There is concern that this natural phenomenon is being altered by a greater build-up of gases from human activity, perhaps giving rise to additional warming and changes in the earth's climate. This additional build-up and its forecast outcome has been called the enhanced greenhouse effect. Considerable uncertainty exists, however, about the enhanced greenhouse effect, particularly in relation to the extent and timing of any future increases in global temperature.

Greenhouse gases arise from a wide range of sources and their increasing concentration is largely related to the compound effects of increased population, improved living standards and changes in lifestyle. From a current base of 5 billion, the United Nations predicts that the global population may stabilise in the twenty-first century between 8 and 14 billion, with more than 90 per cent of the projected increase taking place in the world's developing nations. The associated activities to support that growth, particularly to produce the required energy and food, will cause further increases in greenhouse gas emissions. The challenge, therefore, is to attain a sustainable balance between population, economic growth and the environment.

The major greenhouse gas emissions from human activities are carbon dioxide (CO_2), methane and nitrous oxide. Chlorofluorocarbons (CFCs) are the only major contributor to the greenhouse effect that does not occur naturally, coming from such sources as refrigeration, plastics and manufacture. Coal's total contribution to greenhouse gas emissions is thought to be about 18 per cent, with about half of this coming from electricity generation.

C) The world-wide coal industry allocates extensive resources to researching and developing new technologies and ways of capturing greenhouse gases. Efficiencies are likely to be improved dramatically, and hence CO_2 emissions reduced, through combustion and gasification techniques which are now at pilot and demonstration stages.

Clean coal is another avenue for improving fuel conversion efficiency. Investigations are under way into superclean coal (3-5 per cent ash) and ultraclean coal (less than 1 per cent ash). Superclean coal has the potential to enhance the combustion efficiency of conventional pulverised fuel power plants. Ultraclean coal will enable coal to be used in advanced power systems such as coal-fired gas turbines which, when operated in combined cycle, have the potential to achieve much greater efficiencies.

D) Defendants of mining point out that, environmentally, coal mining has two important factors in its favour. It makes only temporary use of the land and produces no toxic chemical wastes. By carefully pre-planning projects, implementing pollution control measures, monitoring the effects of mining and rehabilitating mined areas, the coal industry minimises the impact on the neighbouring community, the immediate environment and long-term land capability.

Dust levels are controlled by spraying roads and stockpiles, and water pollution is controlled by carefully separating clean water runoff from runoff which contains sediments or salt from mine workings. The latter is treated and re-used for dust suppression. Noise is controlled by modifying equipment and by using insulation and sound enclosures around machinery.

Since mining activities represent only a temporary use of the land, extensive rehabilitation measures are adopted to ensure that land capability after mining meets agreed and appropriate standards which, in some cases, are superior to the land's pre-mining condition. Where the mining is underground, the surface area can be simultaneously used for forests, cattle grazing and crop raising, or even reservoirs and urban development, with little or no disruption to the existing land use. In all cases, mining is subject to stringent controls and approvals processes.

In open-cut operations, however, the land is used exclusively for mining but land rehabilitation measures generally progress with the mine's development. As core samples are extracted to assess the quality and quantity of coal at a site, they are also analysed to assess the ability of the soil or subsoil material to support vegetation. Topsoils are stripped and stockpiled prior to mining for subsequent dispersal over rehabilitated areas. As mining ceases in one section of the open-cut, the disturbed area is reshaped. Drainage within and off the site is carefully designed to make the new land surface as stable as the local environment allows: often dams are built to protect the area from soil erosion and to serve as permanent sources of water. Based on the soil requirements, the land is suitably fertilised and revegetated.

LIVEWORKSHEETS

Aphantasia: A life without mental images

Read the text and write if the statements are TRUE, FALSE or NOT GIVEN.

Most people can readily conjure images inside their head – known as their mind's eye. But this year scientists have described a condition, aphantasia, in which some people are unable to visualise mental images.

Niel Kenmuir, from Lancaster, has always had a blind mind's eye. He knew he was different even in childhood. "My stepfather, when I couldn't sleep, told me to count sheep, and he explained what he meant, I tried to do it and I couldn't," he says. "I couldn't see any sheep jumping over fences, there was nothing to count." Our memories are often tied up in images, think back to a wedding or first day at school. As a result, Niel admits, some aspects of his memory are "terrible", but he is very good at remembering facts. And, like others with aphantasia, he struggles to recognise faces. Yet he does not see aphantasia as a disability, but simply a different way of experiencing life.

Ironically, Niel now works in a bookshop, although he largely sticks to the non-fiction aisles. His condition begs the question what is going on inside his picture-less mind. I asked him what happens when he tries to picture his fiancee. "This is the hardest thing to describe, what happens in my head when I think about things," he says. "When I think about my fiancee there is no image, but I am definitely thinking about her, I know today she has her hair up at the back, she's brunette. But I'm not describing an image I am looking at, I'm remembering features about her, that's the strangest thing and maybe that is a source of some regret."

The response from his mates is a very sympathetic: "You're weird." But while Niel is very relaxed about his inability to picture things, it is a cause of distress for others. One person who took part in a study into aphantasia said he had started to feel "isolated" and "alone" after discovering that other people could see images in their heads. Being unable to reminisce about his mother years after her death led to him being "extremely distraught".

At the other end of the spectrum is children's book illustrator, Lauren Beard, whose work on the Fairytale Hairdresser series will be familiar to many six-year-olds. Her career relies on the vivid images that leap into her mind's eye when she reads text from her author. When I met her in her box-room studio in Manchester, she was working on a dramatic scene in the next book. The text describes a baby perilously climbing onto a chandelier.

"Straightaway I can visualise this grand glass chandelier in some sort of French kind of ballroom, and the little baby just swinging off it and really heavy thick curtains," she says. "I think I have a strong imagination, so I can create the world and then keep adding to it so it gets sort of bigger and bigger in my mind and the characters too they sort of evolve. I couldn't really imagine what it's like to not imagine, I think it must be a bit of a shame really."

Not many people have mental imagery as vibrant as Lauren or as blank as Niel. They are the two extremes of visualisation. Adam Zeman, a professor of cognitive and behavioural neurology, wants to compare the lives and experiences of people with aphantasia and its polar-opposite hyperphantasia. His team, based at the University of Exeter, coined the term aphantasia this year in a study in the journal Cortex. Prof Zeman tells the BBC: "People who have contacted us say they are really delighted that this has been recognised and has been given a name, because they have been trying to explain to people for years that there is this oddity that they find hard to convey to others." How we imagine is clearly very subjective – one person's vivid scene could be another's grainy picture. But Prof Zeman is certain that aphantasia is real. People often report being able to dream in pictures, and there have been reported cases of people losing the ability to think in images after a brain injury.

He is adamant that aphantasia is "not a disorder" and says it may affect up to one in 50 people. But he adds: "I think it makes quite an important difference to their experience of life because many of us spend our lives with imagery hovering somewhere in the mind's eye which we inspect from time to time, it's a variability of human experience."

LIVEWORKSHEETS

Group Members:

Class:



T / F / NG

Aphantasia: A life without mental images

- [ ] Aphantasia is a condition, which describes people, for whom it is hard to see images in their imagination.
- [ ] Niel Kenmuir was unable to count sheep in his head.
- [ ] Many people with aphantasia struggle to remember personal traits of different people.
- [ ] The author met Lauren Beard when she was working on a scene in her next book.

Coal and Pollution

- [ ] The coal industry should be abandoned in favour of alternative energy sources because of the environmental damage it causes.
- [ ] World population in the twenty-first century will probably exceed 8 billion.
- [ ] CFC emissions have been substantially reduced in recent years.
- [ ] The greatest threats to the environment are the gases produced by industries which support the high standard of living of a growing world population.

Group Members:

Class:



T / F / NG

A Beginner's Guide to Home Composting

- [ ] Composting requires expensive equipment to begin.
- [ ] A compost container should be placed on bare soil.
- [ ] A healthy compost heap needs roughly equal amounts of greens and browns.
- [ ] Closed compost bins produce better compost than open heaps.

A Short History of Tea

- [ ] Green, black and oolong teas are all made from the same species of plant.
- [ ] The story of the emperor Shen Nong is regarded by the passage as reliable historical fact.
- [ ] Lu Yu wrote his famous work on tea during the Tang dynasty.
- [ ] When tea first reached Europe, it was cheap and available to everyone.

LIVEWORKSHEETS