МІНІСТЕРСТВО ОСВІТИ І НАУКИ УКРАЇНИ

НАЦІОНАЛЬНИЙ ТЕХНІЧНИЙ УНІВЕРСИТЕТ
«ХАРКІВСЬКИЙ ПОЛІТЕХНІЧНИЙ ІНСТИТУТ»

ЧИТАЄМО ТА СЛУХАЄМО ВВС

Методичні вказівки
до виконання самостійних завдань з читання та аудіювання
до змістовного модуля «Пошук та обробка інформації».
Частина 1

Для студентів 1 курсу всіх спеціальностей

READING AND LISTENING TO BBC

Self-learning guides on reading and listening tasks to module “Searching for and processing information”
Part 1
For first-year students of all departments

Затверджено
редакційно-видавничою
радою університету,
протокол № 2 від 29.06.2022 р.

Харків
НТУ «ХПІ»
2023

Методичні вказівки до виконання самостійних завдань з читання та аудіювання до змістовного модуля «Пошук та обробка інформації». Частина 1 / уклад. О.Я. Лазарєва, О.О. Ковтун, Т.С. Чудовська – Харків: НТУ «ХПІ». – 40 с.

Укладачі: О.Я. Лазарєва, О.О. Ковтун, Т.С. Чудовська

Рецензент Т.Є. Гончаренко

Кафедра іноземних мов

CONTENTS

SECTION 1. COMMUNICATE

THE SPANISH ISLAND THAT COMMUNICATES BY WHISTLE

Follow the link to scan the article and answer the questions
https://www.bbc.com/travel/article/20210720-the-spanish-island-that-communicates-by-whistle

On the small Canary Island of La Gomera, an ancient whistling language that once almost died out is now undergoing an exciting revival.

In the rugged crags of Barranco de Ávalo, a ravine on the small Canary Island of La Gomera, two local 12-year-olds were practicing their *Silbo Gomero,* the local whistling language. For an entrancing few minutes, Irún Castillo Perdomo and Angel Manuel Garcia Herrera's lilting warbles reverberated around the barren gorge and soared proudly into the air like eagles in flight.

They were accompanied by 70-year-old retired Silbo Gomero teacher Eugenio Darias, whose grandfather used to own and work on this very same land. He told me that the boys' whistled conversation was similar to any they would have over text message or in the playground, but the focus was instead on the six differentiating sounds that make up La Gomera's protected whistle language.

While it's true that most children their age would sooner pick up their phone and tap away, this small Canary Island invites them to think differently. Thanks to Darias, their threatened tongue has been a compulsory school subject since 1999 – and almost all 22,000 residents can understand it alongside their mother tongue of Canarian Spanish.

"It's important to give students the idea that they can really use it if they need to, like other languages, but also that it's not necessary for everyday use," said Darias, who pioneered the Silbo Gomero learning programme. "Our aim is to give the whistle more importance so that the children can be confident using it together. Importantly, having the whistle protected within our compulsory curriculum prevents extinction altogether."

Whistle languages, in varying guises, exist in as many as "70 places", according to local broadcast journalist Francisca Gonzalez Santana. "In Turkey, for example, the whistle began 500 years ago during the Ottoman Empire," she said. "It then spread to all regions of the Black Sea; and in Mexico, we can still find whistled communication in Spanish – Chinantec."

Silbo Gomero, which is one of the most studied whistling languages and was officially declared an Intangible Cultural Heritage by UNESCO in 2009, uses six

condensed sounds to communicate. Two differentiating whistles replace the five spoken vowels in Spanish, while just four replace the 22 consonants. Whistlers elongate or shorten the sounds to mimic the words.

Several whistling methods exist on the island, though perhaps the most traditional is demonstrated by local sculptor José Darías. His Whistling Tree sculpture at Mirador de Igualero, a viewpoint in Vallehermoso overlooking a ravine where Silbo Gomero was most active, shows how the index finger should be bent and placed inside the mouth while whistling with an open palm beside it to amplify the sound.

Experienced whistlers use different finger methods and can often tell who is calling by the whistle's "accent" alone – but most whistlers will introduce themselves and call the recipient's name. When the message is understood, they whistle back "*bueno bueno"*. Short and simple indeed.

What isn't quite as short and simple is the language's origin. History books suggest the whistle dates back to at least 1402 during the initial Spanish conquest of the Canary Islands, but Silbo Gomero's earlier heritage is often up for debate.

DNA-based research published in 2019 by Tenerife's La Laguna University has matched La Gomera's early inhabitants, the Guanches, with Berbers (now known locally as Amazigh). These indigenous people roamed North African regions more than 3,000 years ago and communicated by whistle; it's therefore widely believed that the Spanish settlers on the island adapted the whistling language of La Gomera's early inhabitants to suit their native tongue.

La Gomera's specific whistle found its way to other Canary Islands during the three-year Spanish conquest – it even later followed emigrating Gomeros to South America – but it only survived in one other island in the Canaries: El Hierro, where, according to Santana, the whistle is still occasionally used among elderly residents.

Silbo Gomero lent itself to La Gomera's demanding terrain – namely its deep ravines – allowing the locals to communicate with a drifting, piercing sound that could travel for several kilometres. From atop the ravines, the locals would announce events, request livestock be brought over, warn of impending danger, or even announce the death of a family member. "It saved a lot of climbing," said Darias.

In the 1950s, Silbo Gomero was used so frequently that there was often a scattered queue of farmers waiting to send instructions across the valleys. "It was difficult terrain to work on – nobody wanted to climb up and down the ravines to pass on a message. Because of this, so many whistling conversations were happening at the same time, and we would have to wait our turn," Darias said.

"It was like traffic!" he continued. "However – during the 1960 and '70s, most agricultural land was abandoned and many of the workers had left the island. As Silbo

Gomero was mostly used between local livestock holders, when they left the island, the whistling left with them too."

Silbo Gomero was first in decline by the 1960s, when growing economic conditions forced many of the island's workers to emigrate to more prosperous countries like Cuba and Venezuela, as well as the neighbouring Canary Island of Tenerife. Soon after, phones became commonplace and threatened the language altogether.

By the 1990s, modern technology ascendancy and the introduction of new roads and paths on La Gomera removed the necessity and practicality of Silbo Gomero, dangling it near extinction. This is where Darias stepped in to protect its future by ensuring future generations not only understood the whistle but were able to use it too.

"The whistle has been defended with greater care in the Canary Islands," Santana noted, "because it is an essential part of our culture: the orography of the islands, with mountain areas and canyons, and our economy that has been linked to agriculture and livestock."

While the whistle is now rarely heard outside of school or other official programmes, however, it is occasionally used in the few parts of the island with no telephone connection. "I know of two goat herders who still whistle to each other," Darias said. "They are nephews who live on the south side of the island. Their livestock moves around in an area with no mobile network, and that's why it's necessary for them to use it."

"Would you use Silbo Gomero today if your phone ran out of battery?" I asked.

"Of course!" he said. "After all, we'd still communicate that way if phones didn't exist."

1. Who do these names belong to?

	student	teacher	journalist	sculptor	not a person
Barranco de Ávalo					
Irún Castillo Perdomo					
Silbo Gomero					
Angel Manuel Garcia Herrera					
Eugenio Darias					
Francisca Gonzalez Santana					
José Darías					
Mirador de Igualero					

2. What do these numbers mean?

	6	12	500	70	22,000	1999
residents						
age of the whistle						
sounds						
age of a person						
year						

3. What regions are mentioned in the text? Put + if the region is mentioned.

South America		China	
Germany		Venezuela	
Turkey		Ukraine	
England		France	
Italy		Mexico	
North Africa		the Canaries	
Cuba			

4. Say whether the statements are TRUE, FALSE or NOT GIVEN.

1. Silbo Gomero is now undergoing a revival.
2. Eugenio Darias is 60 years old.
3. He has no children.
4. Eugenio Darias` grandfather was born on the small Canary Island of La Gomera.
5. Silbo Gomero has been a school subject since 1999.
6. Silbo Gomero was officially declared a Cultural Heritage by Unesco in 2008.
7. The language uses 22 sounds to communicate.
8. Experienced whistlers can tell who is calling by the whistle's "accent" alone.
9. When the message is understood, they whistle back "*bueno bueno"*.
10. When economic conditions forced many of the island's workers to emigrate to other countries, Silbo Gomero was in decline.

5. In the text, find facts that agree with the ones given in the text "Whisling in La Gomera" and a piece of information which contradicts it (Michael Black, Wendy Sharp. Objective, Student's book. Cambridge University press, P. 8).

Listen to Eugenio Darias whistling.

https://soundcloud.com/user-289861732/love-the-world-eugenio-darias-whistling

WHY ARE WE LEARNING LANGUAGES IN A CLOSED WORLD?

By Sophie Hardach, 6th January 2021

Scan the article or follow the link and answer the questions.
https://www.bbc.com/worklife/article/20201230-why-are-we-learning-languages-in-a-closed-world

Language learning spiked during lockdowns, commercial providers say. But when no-one can travel, and the job market looks unstable, why have people turned toward language now?

When the UK's second lockdown hit in November, I was learning to decipher a Luwian curse.

Luwian, a language spoken and written in ancient Turkey some 3,000 years ago, may not seem like the most obvious choice for a new hobby. It survives mainly in the form of enigmatic symbols carved into scattered rock monuments. But spending a couple of hours a week cracking this code, under the guidance of a Luwian expert, turned out to be an almost magical form of stress relief. I'd signed up to the course shortly before the lockdown, and after each session, I felt that my mind had been cut loose from endless pandemic-related worries, and was free to roam and discover – if only for an evening.

As obscure as Luwian may be, my urge to explore a foreign language was right on trend in 2020. During the first lockdown in March, user numbers for language-learning apps including Duolingo, Memrise and Rosetta Stone rocketed, according to data from the companies. Duolingo reported a 300% jump in new users. The numbers generally eased over the summer, but saw another bump during the second lockdown. While Spanish, French and German were popular choices, Brits also tried out a wide range of other languages. The uptake of Welsh and Hindi soared, for example, with learners citing brain stimulation, cultural interest and family ties as motivating factors. Cultural curiosity also boosted the popularity of Japanese.

Of all the pursuits people have adopted amid the pandemic – making sourdough, working on screenplays – learning a language may seem like an odd choice. After all, the world is effectively closed, with much of international travel off limits. And even for those hoping that language learning could improve their career prospects, the job market remains unstable, with some in no position to change careers. But turning to language may be able to uniquely connect us to something many have longed to feel again.

A popularity spike

It seems that just as I had time travelled with Luwian, people all over the UK jumped on languages as a means of mental escape.

“During lockdown, we weren’t able to travel, people’s holidays were cancelled, and so I think people were maybe pining after cancelled holidays and wanted to get a flavour of another country in their home,” says Vicky Gough, schools adviser for the British Council, a UK organisation for cultural relations and educational opportunity.

Deeper emotional factors may also have been at play. As Covid-19 swept the globe and shattered old certainties, some took stock and decided it was time to tackle long-neglected life goals. A recent British Council survey on lockdown language-learning suggests that for many UK adults, a lack of foreign language skills is a cause of regret. Only 9% of respondents said they had kept up the foreign language they learned at school, but 64% wished they had done so. The pandemic may have tapped into that pent-up interest.

Juliet Waters, a 58-year-old retired primary school teacher who runs a window business in Yorkshire with her husband, had long harboured dreams of speaking a foreign language. She was particularly inspired by the multilingual children she taught, such as a girl who spoke Polish and Chinese at home, and English at school. “I’ve always been absolutely fascinated by the younger children who can come into the classroom and can switch from one language to another,” she says. “I always wished that I’d been bilingual.”

In 2019, she and her husband went on a world cruise and made friends from different countries who all spoke Spanish. Waters thought it would be nice to learn Spanish, use it with her new friends and explore Spain. When the UK locked down, and she found herself working from home, with no visitors nor opportunities to go out, she threw herself into that plan with a new intensity. Since April, she has been studying Spanish every day for an hour over breakfast, and often again later in the day, using books and CDs. She has written Christmas letters in Spanish to her friends, and hopes to practice with them over Skype.

“It’s occupied me and it’s kept my brain going,” she says. But the experience has also changed her on a more fundamental level, making her realise that there are other things she wants to achieve. She is now considering doing a post-graduate degree in musical theatre. “The fact that I can still learn, and I’m enjoying it, I think that’s been a little bit of a revelation to me.”

In fact, research has shown that studying a new language can stimulate the brain and enhance creative thinking and mental agility, regardless of the student’s level of proficiency. “It can mean you get more flexible in how you think, because you begin to imagine phrasing something in a different way in that other language,” says Bencie Woll, a linguist at University College London and co-author of a report for the British Academy on the cognitive benefits of language learning. This flexibility and creativity can even improve your grasp of your own native language. Woll emphasises that the benefits arise as a result of learning process, and have nothing to do with how quickly a person advances.

“This is not to do with being great at another language, this is to do with beginning to learn another language.”

‘What is it that I actually want to do?’

For Sonny Chatters, a 19-year-old actor and philosophy student in Essex, studying a new language was part of an even more radical transformation, after the pandemic prompted him to overhaul his life plan. When the virus struck, Chatters was in the process of applying to drama schools, having acted professionally since he was a child. But when theatres closed and drama schools announced that classes would be held via Zoom, he felt an inner shift.

“I sat down and thought, what is it that I actually want to do?” he recalls. He thought about other things he had long been interested in. “It was at this time that I went, you know what, I want to study philosophy, I want to learn a language. Let’s go for a difficult language, let’s go for a language that’s completely different – Japanese.”

He is now in his first year of a four-year philosophy degree, with an option to spend the third year in Japan. He has been studying Japanese with books, apps and podcasts for the past five months, motivated by the thought of living in a country that has always fascinated him. Some of his acting-related skills, such as persistence and memorisation, are proving useful for this new ambition. Like Waters, he is also fulfilling a deeper longing. “I’ve always wanted to learn a language. It’s just something that’s extremely impressive.”

The allure – and practicality – of multilingualism

In the age of machine translation, and given the dominance of English as a global lingua franca, it may be surprising that people still treasure the idea of being multilingual. But those who start out learning a language for self-fulfilment may find it still has many practical benefits, too.

“We tend to think that everyone all over the world speaks English, especially in business, so there’s no point in learning another language. But actually, we do find that language skills are still sought after by employers,” says Pawel Adrjan, an economist at the Indeed Hiring Lab, which produces research based on data from the Indeed job site.

Based on an analysis of Indeed’s 3.5 million job postings for the UK this year, Adrjan found that even as borders were closed, demand for people with foreign-language skills rose in sectors such as marketing, sales and customer service. It shot up in the childcare sector, with a 40% increase, possibly because families were unable to travel and instead hired nannies to provide native-speaker input. In tourism, hospitality and retail, demand dropped, though that may change as travel resumes.

“The fact that in jobs like sales and customer service, those skills have been in demand for a while, suggests that really being able to speak to customers in their language

is really important for businesses," says Adrjan. "And that's likely to continue, whether business meetings are held in person or whether they are held by video conference."

Some of the big winners of the Covid-19 economy, such as global film and TV streaming services and online retailers, are also boosting demand for translators who can provide subtitles, dubbing and product descriptions in different languages. This trend toward global content began before the pandemic and is likely to outlast it, according to Esther Bond, a London-based director at global research firm Slator, which specialises in the translation industry. The lockdown-induced shift to virtual offices and events has also fuelled a new trend: companies providing interpreters for online conferences. "We've seen a lot of interest and growth within platforms that offer remote, simultaneous interpreting," says Bond.

My smattering of Luwian is unlikely to make its way into any business negotiation soon. But it does have some practical uses, since I regularly write about scripts and languages. And it offered me something very rare and precious in the pandemic year: a problem that could be solved – and even a little hope to boot.

1. Who do these names belong to?

	student	educator	researcher	not a person
Juliet Waters				
Pawel Adrjan				
Rosetta Stone				
Bencie Woll				
Sonny Chatters				
Slator				
Vicky Gough				
Esther Bond				

2. What do these numbers mean?

	58	64	3,000	19	300	3,5 million
a part of a name						
age of the language						
number of job ads						
age of a person						
percentage						

3. What languages are mentioned in the text? Put + if the language is mentioned.

Turkish		Japanese	
German		Chinese	
Polish		Luwian	
English		Ukrainian	
Italian		French	
Spanish		Latin	

4. Explain the following words and expressions:

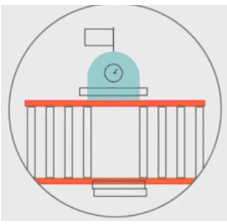
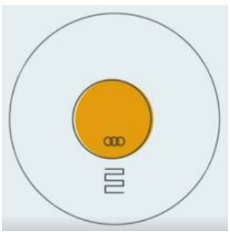
to decipher	regardless of	simultaneous
to soar	have nothing to do with	smattering
a pursuit	to overhaul	to boot
to tap into	lingua franca	
to enhance	dubbing	

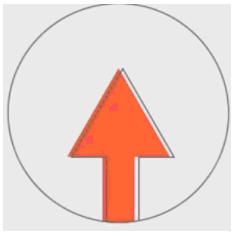
5. So what are the reasons people learn foreign languages during the pandemic? Did you start any new activity during the pandemic lockdown?

GETTING THE WORLD ONLINE

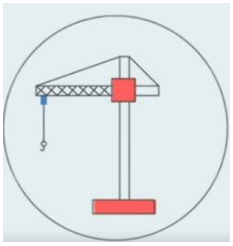
Follow the link to watch the video and answer the questions.
https://www.bbc.co.uk/reel/playlist/game-changers?vpid=p094cvpp

1. What do these numbers stand for?
a) 2016 _____
b) 57% _____
c) 15% _____
d) 42 million _____

2. What do these pictures represent?
a 
d 

b 

c 

e 

SEVEN FEMALE SCIENTISTS YOU MAY NOT HAVE HEARD OF – BUT SHOULD KNOW ABOUT

By Hazel Shearing BBC News, 6 February 2020

Scan the text or follow the link and fulfill the tasks.
https://www.bbc.com/news/uk-51399835?fbclid=IwAR2n8TF57oevN8snqDcexrKVJWknG7cUGryAer67BaMxIwscm7EJGqZCiSs

Not a single woman's name features in the national curriculum for science, an education charity says – prompting calls for the government to act over a "lack of visible role models for girls".

Teach First has launched the STEMinism camapign, calling to close gender gaps in science and maths careers.

It says no female scientists were mentioned in the GCSE science curriculum, while just two – DNA pioneer Rosalind Franklin and paleoanthropologist Mary Leakey – were referred to in three double science GCSE specifications from the major exam boards. In comparison, more than 40 male scientists or their discoveries were mentioned.

Meanwhile, a separate poll conducted by the charity revealed half of people are unable to name a single female scientist, alive or dead.

But it is not just Britain's men who have made pioneering scientific discoveries. Here are some of the overlooked British women whose research changed the world.

Mary Somerville (1780–1872)

Astronomer. Born in: Jedburgh, Scotland

Somerville was named the 19th Century's "queen of science" after her death.

Her popular books linked up and explained different areas of scientific study, and her detailed work on the solar system was influential in the discovery of Neptune.

She made history in 1835 when she jointly became the first female member of the Royal Astronomical Society in London.

Somerville has been on the Royal Bank of Scotland's £10 notes since 2017.

Mary Anning (1799–1847)

Palaeontologist. Born: Dorset, England

A self-taught pioneer, Anning discovered Jurassic remains in her hometown of Lyme Regis. She came across her first find – an ancient reptile later named an Ichthyosaurus – at the age of 12.

The Natural History Museum calls her the "unsung hero of fossil discovery", as the scientific community was reluctant to recognise her contributions to science during her lifetime.

She was not allowed to be part of the Geological Society of London, for example. In fact, it did not admit women until more than half a century after her death.

Ada Lovelace (1815–1852)

Mathematician. Born: London, England

Ada Lovelace was a leading 19th century mathematician credited with creating early computer programs.

She worked with her friend Charles Babbage, an inventor and mechanical engineer, on his proposals for an "Analytical Engine".

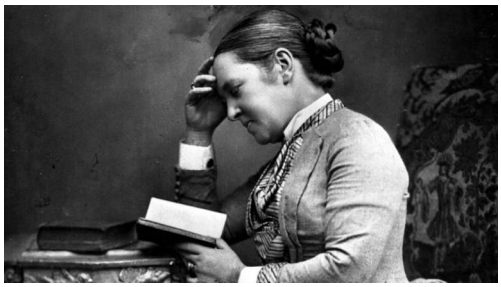
The device was never built, but the design had the essential elements of a modern computer.

Her notes described how codes could be created for the handling of letters, symbols and numbers.

She also created a method for the machine to repeat a series of instructions – a process known as "looping", which computer programs still use today.

Elizabeth Garrett Anderson (1836–1917)

Doctor. Born: London, England



Garrett Anderson was the first woman to qualify in the UK as a doctor – but it wasn't easy to get there.

In her mid-20s, she enrolled as a nurse at the Middlesex Hospital in London.

She attended lectures and observed the male medical students, but no university would let her take the exams to become a doctor.

However, after finding that the Society of Apothecaries couldn't legally refuse her, she qualified in 1865.

She subsequently opened the St Mary's Dispensary for Women and Children in London and co-founded the London School of Medicine for Women.

She was the sister of Suffragist leader Millicent Garrett Fawcett, and campaigned for women's right to vote.

Elsie Widdowson (1906–2000)

Dietician. Born: Surrey, England

Widdowson devoted her life to improving people's diets in Britain and overseas.

In 1940, when food was being rationed during World War Two, she published a book called The Chemical Composition of Foods that contained details of the nutritional values of many foods.

She was one of the dieticians who oversaw the addition of vitamins to food during wartime rationing.

Dorothy Hodgkin (1910–1994)

Chemist. Born: Cairo, Egypt

Hodgkin was born in Cairo to a British couple who were working in the north African country during a period when it was under British control.

But she herself largely spent her childhood in Norfolk and was educated at a state school in Beccles, Suffolk, where she fought to be allowed to study chemistry along with the boys.

She used X-ray technology to discover the structures of penicillin, insulin, and vitamin B12.

In 1964 she won the Nobel Prize in Chemistry – and is still the only British woman to have done so.

She also lectured former Prime Minister Margaret Thatcher, who studied chemistry at Somerville College in Oxford in the 1940s.

From 1976 to 1988, Hodgkin was president of the Pugwash Conference, an international organisation set up in the 1950s to assess the dangers of nuclear weapons.

Jocelyn Bell Burnell (1943–)

Astrophysicist. Born: Lurgan, Northern Ireland

Professor Dame Jocelyn Bell Burnell is credited with one of the most important discoveries of the last century: the discovery of radio pulsars.

Pulsars are the by-products of supernova explosions that make all life possible.

Prof Bell Burnell was overlooked for the Nobel Prize in Physics in 1974, even though the award went to two male academics who worked alongside her.

1. Choose the name to answer the questions.

Who of these women ….	Mary Somerville	Mary Anning	Ada Lovelace	Elizabeth Garrett Anderson	Elsie Widdowson	Dorothy Hodgkin	Jocelyn Bell Burnell
was born in Great Britain?							
dealt with astronomy?							
was a member of a scientific society?							
had formal education?							
contributed to human physical wellbeing?							
is considered the first programmer?							
was awarded the Nobel Prize?							

2. Find information about one of other outstanding female scientists and make a short report.

LEAP YEARS

Follow the link to watch the video and complete the tasks.
https://www.youtube.com/watch?v=gvuz0BVy5TM

1. Choose one of the options.

1. It takes earth ___ days to circle the Sun.
a) 365.2 b) 365.4 c) 365.24
2. Because of approximation ___
a) four days are added every 4 hundred years
b) three days are added every 4 hundred years
c) three days are added every 4 years
3. The first rule says that we should add an extra day to the year which ___
a) is divided by four b) ends in 4 c) ends in zero

4. The second rule: a leap year ___
a) can be divided by a hundred b) can not be divided by one hundred
c) can not be divided by one thousand
5. The leap years were ___
a) 1600, 2000 b) 1600, 1700 c) 1700, 1800
6. Georgian calendar ____.
a) is not used today b) was created exactly 400 years ago c) was created by the Pope

2. Match words and expressions (1–6) with their explanations (a–f).

1	in sync	a	from time to time; sometimes but not very often
2	nought	b	despite earlier problems or doubts
3	every now and then	c	to become devoted to intellectual or academic pursuits
4	after all	d	to fix a problem
5	to redress	e	working well together; matching; in agreement
6	to get nerdy	f	zero

SEVEN MINUTES TO MARS

Follow the link to watch the video and answer the questions.
https://m.youtube.com/watch?v=M4tdMR5HLtg

1. How do they call the Entry, Descent and Landing and why?
2. At what speed does Perseverance enter Mars's atmosphere?
3. When is the parachute deployed?
4. What are the differences of Perseverance and Curiosity rovers?
5. Why did they choose Jezero Crater as a landing site?
6. What will happen with the heat shield while the vehicle is landing?
7. What technology is used to choose the landing site?
8. What will happen 20 meters above the ground?

BENEFITS OF NOTE TAKING BY HAND

By Hetty Roessingh, University of Calgary, 11th September 2020

Read the text below or follow the link to read it and complete the tasks.
https://www.bbc.com/worklife/article/20200910-the-benefits-of-note-taking-by-hand

1 Computers and phones have become the go-to note-taking method for many. But your brain benefits from an old-fashioned pen and paper.

2 Do you pick up any old notebook and pen when you need them, or do you have a thing for Molescines or Monblancs?

3 Whether or not you're **picky**, know that tools for the hands are tools for the brain. Handwritten notes are a powerful tool for encrypting embodied cognition and in turn supporting the brain's capacity for retrieval of information. **And secondly**, when you take notes by hand, your hands create a robust external memory storage: your notebook.

4 Taking notes by hand is a win-win, and belongs in every student's cognitive tool kit. Learning how to take notes by hand effectively, and how to ingrain note-taking as a key learning and study tool, can begin as early as grades 3 or 4, but **it**'s never too late to begin.

5 We live in a digital age where daily functioning involves digital communication. Automaticity in keyboarding is an important skill too, and the tools and applications for digital communication will continue to evolve and have their place. But keyboarding does not provide the tactile feedback to the brain that contact between pencil or pen and paper **does** the key to creating the neurocircuitry in the hand-brain complex.

6 **The processing advantage**

7 While your laptop might seem faster and more efficient, there are good reasons for having a paper-bound notebook and pen – any kind you prefer – at the ready.

8 Researchers have found that note-taking associated with keyboarding involves taking notes verbatim in a way that does not involve processing information, and so have called **this** "non-generative" note-taking. By contrast, taking notes by hand involves cognitive engagement in summarising, paraphrasing, organising, concept and vocabulary mapping – in short, manipulating and transforming information that leads to deeper understanding.

9 Note-taking becomes note-making: an active involvement in making sense and meaning for later reflection, study or sharing of notes to compare understanding with lab partners or classmates. This becomes a potent study strategy, **as** one's own processing can be further consolidated through talk.

10 There are templates and formats that teach more effective ways of taking hand-written notes. A popular **one** is the Cornell style developed by education professor Walter Pauk. You can also explore other ways that can be adapted for different study needs, such as compare /contrast charts or webs.

11 **Cognitive demands of note-taking**

12 Taking good notes depends on fluency of hand, which means legibility and speed combined. This is best achieved with a clean, uncluttered and connected script, meaning cursive writing, that young learners can begin to learn in Grade 2. **Fluency of hand comes from instruction and practice in the early years of school, and sustained opportunities for authentic, purposeful literacy engagements in turn allocating working memory space to the cognitive demands of note-taking.**

13 The move from grades 3 to 4 is a big leap for young learners. Content curriculum in science, social studies, English language arts and mathematics makes accelerated demands on children to shift into academic modes of literacy.

14 Each year of educational advancement makes increasing demands in reading and writing, understanding and making sense of vast amounts of information in multi-modal formats.

15 **Sketching and drawing belong, too**

16 Leonardo da Vinci wrote: "…the more minutely you describe, the more you will confuse the mind of the reader and the more you will remove him from knowledge of the thing described. Therefore it is necessary to make a drawing … as well as to describe …"

17 The artist's notebooks reveal a creative, inquiring, inventive mind and man of science and art **unparalleled**, centuries ahead of his time. Fergus Craik and Robert Lockhart, pioneers in cognitive neuroscience research, noted three levels of information processing: their theory lays bare the neuroscience behind da Vinci's insights centuries ago. When people visually represent knowledge, they can deepen their comprehension of concepts such as cycles and relationships: as a result, some cognitive researchers advocate teaching different ways of representing knowledge from an early age.

18 Florence Nightingale is remembered for her contributions in reforming medicine through her detailed, meticulous observations, documentation, note-taking and writing. She is credited with creating the pie chart to represent this information.

19 I assign my own students, preparing to become teachers, the task of sketching the layout of the class where they are working in a field placement. They also take observational hand-written notes recorded in a Cornell template. This assignment is about interpreting what's going on in the classroom. This process of documenting provides a good scaffold for later review or reflection and theorizing the work of classroom teachers.

20 If writing is a requirement of your profession **whether** in journalism, teaching, architecture, engineering, fashion and more, you already know the benefits and

importance of note-taking and sketching.

21 **Analogue, digital and legacy formats**

22 When deep understanding and remembering, making personal connection and sparking creative thought are important, hand-written notes matter and endure over time.

23 Interestingly, the art of keeping a paper diary, journal or planner has generated scores of online communities. **Many find pleasure in keeping calendars, daily organizers, cards and notes and lists of all kinds, and writing family stories for the next generation all by hand – and then sharing them digitally.**

24 For serious students, note-taking is an indispensable cognitive tool and study technique. Creating neurocircuitry for memory and meaning through the hand-brain complex is the key to understanding the value of hand-written notes. Think twice before relying solely on your laptop this fall!

1. How well do you understand the text structure?

1. What does the word "picky" (paragrph 3) refer to?
2. In paragraph 3, we read "And secondly…". What is "Firstly"?
3. What is the function of the word "it" (paragraph 4)?
4. What is the function of the word "does" (paragraph 5)?
5. What is meant by "this" (paragraph 8)?
6. What word can you use instead of "so" (paragraph 9)?
7. What is the function of the word "one" (paragraph 10)?
8. Paraphrase the sentence starting "Fluency …" (paragraph 12) making it simpler (e.g. breaking it into smaller parts).
9. What is the function of the word "unparalleled" **(**paragraph 17**)**?
10. Choose one option to use instead of "whether" (paragraph 20): a) albeit; b) be it; c) if; d) either?
11. What do you think – do we need all "and"-s in the sentence which starts "Many…" (paragraph 23)?

2. Explain the words and expressions from the text.

a go-to method	
Moleskine	
Montblanc	
embodied cognition	
win-win	
retrieval	

(neuro) circuitry	
verbatim	
legibility	
minutely	
to lay bare	
meticulous	
scaffold	
indispensable	

A SHORT HISTORY OF NOTHING

Follow the link to watch the video and complete the tasks.
https://www.bbc.co.uk/ideas/videos/a-short-history-of-nothing/p076bm46?playlist=magical-maths

1. Find synomyms to the words from the recording.

to emerge	
to be banned	
antithesis	
to signify	
insight	
concept	
to spread	
to promote	
to be accustomed	
radically	
fundamental	
breakthrough	
to rely on	
to decode	

2. Explain the idioms from the recording:
in its own right; made its way; which is all about smth; let alone; did his bit.

3. Formulate 3–5 questions for your group-mates to answer.

CORONAVIRUS: TIPS TO STOP THE SPREAD OF MISINFORMATION

1. Following is the script of the recording. Split the text into sentences. Put punctuation marks where necessary. Try to divide the script into paragraphs.

In the midst of the corona virus pandemic passing on information can feel like one way we can support our families and friends here at the BBC we are working very hard to make sure that everything we broadcast and publish is accurate and up-to-date but there is a whole load of information out there that isn't and misinformation can spread fast if a message is sent to a whatsapp group of 20 then each of them shares it with 20 other people and this happens five times it can reach more than three million people very quickly untruths can take many forms one of the most common we're seeing is copied and pasted messages being passed around on whatsapp or in facebook groups containing bad advice or fake cures and because these are shared by a friend or trusted source it's not obvious who wrote these messages in the first place often they're attributed to a vague source like a friend's friend who's a doctor soldier or works with the government for example a voice note has been spreading on whatsapp in it a woman is translating advice from a colleague who has a friend working at a hospital on the Spanish island of Gran Canaria some of the tips are helpful such as washing surfaces thoroughly but the voice memo includes misleading advice as well the speaker suggests sunlight neutralizes the virus and that coronavirus can be killed by taking a sip of warm water every 20 minutes there is no scientific basis for either of these claims if you're not sure the whole post is true it might do more harm than good to share it and if the source isn't easily identifiable or the story hasn't been reported elsewhere then it really is worth being sceptical about it pictures taken out of context can also be really misleading a video from Italy was posted on Twitter showing military vehicles on the streets there were rumors they were responding to coronavirus riots in fact they were returning from routine exercises that had nothing to do with the outbreak some of us may share information with our friends as a joke or to lighten their mood but even if they don't take it seriously others might for example a claim that lions were released in Russia to patrol the streets was taken seriously by some it was not true we all want to share news that we think will help others but before you do follow these steps has the story been reported anywhere else is it from a reliable source has the photo or image been taken out of context if you're not sure then maybe it's fake and you can stop that information from doing harm by not sharing it any further if you want to check medical advice go on the World Health Organization website and if you feel that a story isn't real you can always look to a reliable source like the BBC

2. Now watch the video and check.
https://www.youtube.com/watch?v=mYsoH7Fiqbw

SECTION 2. A HEALTHY DIET

HOW TO MAKE PIZZA LIKE A NEAPOLITAN MASTER

By Ondine Cohane, 17 April 2020

Scan the text or follow the link to fulfill the tasks.
http://www.bbc.com/travel/story/20200415-how-to-make-pizza-like-a-neapolitan-master

When you think of Italy's most memorable dishes, its beloved pizza will most likely be among your top five, if not top three, favourites. It's an ultimate comfort food that has become an ever-growing obsession around the world. But what is it that makes pizza from Italy so special, and where do you find the very best?

Like so many of the country's most prized gastronomic delights like wine, olive oil and cheese, the quintessential pie from Naples, where pizza was born, has become so cherished that it's now worthy of its own Designation of Controlled Origin (DOC). The city's pizza-making tradition even received Unesco recognition in 2017 as an intangible cultural heritage item.

Naples is, of course, the hub of the *pizza napoletana* (Neapolitan pizza), with generations of the same family groomed in the art of being a *pizzaiolo* (pizzamaker). And each family carefully guards its recipe variations and bakes pizza with a passion that's matched perhaps only by the city's love for its football team.

There are three basic types of Neapolitan pizza: the Margherita, topped with tomato sauce, mozzarella cheese and fresh basil; the marinara, which skips the cheese and uses oregano and garlic instead of basil; and the "DOC" made with *mozzarella di bufala* (buffalo mozzarella) instead of the usual *fior di latte* made from cow's milk.

There are three basic types of Neapolitan pizza: the Margherita, topped with tomato sauce, mozzarella cheese and fresh basil; the marinara, which skips the cheese and uses oregano and garlic instead of basil; and the "DOC" made with *mozzarella di bufala* (buffalo mozzarella) instead of the usual *fior di latte* made from cow's milk.

Following the 1861 unification of the country, baker Raffaele Esposito was credited, in 1889, with inventing the now ubiquitous Margherita pizza in honour of the visit of Queen Margherita di Savoia, the wife of King Umberto the I, to the city. The colours of the Italian flag were mirrored in the ingredients: tomatoes for red; cheese for white; and basil for green. And thus, the iconic pizza was born.

Today, there are more than 500 pizzerias in Naples, but only a fifth of them are certified by the True Neapolitan Pizza Association, an organisation that was created in 1984 to protect and distinguish the authentic pies from the wannabees. Its criteria is based not only on the ingredients that go into the pie – including everything from the type of flour in the dough to the provenance of the cheese – but also the preparation, from the dough fermentation style to oven temperature. The association now even holds an annual contest to judge which pizza makers are the best in the world. Franco Pepe from Pepe in Grani has won the last three years in a row.

Pizza makers like Pepe have achieved a kind of rock-star status in Italy nowadays, but the work is quite physically exhausting, with a great attention given to seemingly simple methods.

Among the most famous pizzaioli in town, Gino Sorbillo is a third-generation dough wizard who runs Gino e Toto Sorbillo pizzeria, which is often considered one of Naples' best. His father was one of 21 children (number 19), all of whom helped with the family's pizza-making business. It was the same for Sorbillo's generation: "[The whole family] assisted in every step from buying the materials, [making] the dough and seeing how to treat the ingredients," he explained. "But the most important thing was to see the humanity and connection there needs to be in a pizzeria," as the pizza-making process requires manual labour, long hours, and, for the Sorbillo family, working in a humble and sometimes difficult part of town.

His grandfather opened the family's first pizza parlour back in 1935 along Via dei Tribunali, a historically troubled street in the centre of Naples that's been rife with organised crime. That background has always been on Sorbillo's mind, who wants to promote the city he loves and provide a refuge from gang activity for his patrons and workers. His Naples location was bombed last year, but ever determined, he has since reopened.

Sorbillo now has pizzerias in places like Tokyo and New York, and although he monitors each one for its adherence to the family's recipes, it's this first location in Via dei Tribunali that remains the business' centrepiece, where locals and tourists alike line up to taste the original pizza. The pizzeria has also helped breathe life into the city, which has a reputation for being the country's most chaotic and among its poorest. "I think I also gave

some younger people the inspiration that we could do something here in Naples, to say, 'we are going to try to so something too'," he said.

So, how does one make an authentic Neapolitan pizza, especially for those who can't go to Naples to eat one?

To begin with, the dough has to be just right, with the use of Italian 00 or 0 wheat flour, fresh brewer's yeast (no dry yeast), water and salt. The dough must be rolled by hand or with a slow speed mixer; never using a rolling pin. However, twirling it in the air to oxygenate the dough while belting out a Neapolitan classic might be best left to the professional pizzaioli.

Ciro Salvo of 50 Kalò, another of the city's most esteemed masters, has another dough-making must: "The fermentation and leavening of the dough must be at least 10 to 12 hours."

Raw, pureed tomatoes are another necessary ingredient for a great pie – preferably San Marzano, Italy's most prized variety, which grow on the volcanic plains to the south of Mount Vesuvius and are required for pizzas with DOC designation. However, pizza star Franco Pepe prefers to use his own home-grown heirloom tomatoes.

Only two types of mozzarella are used for Neapolitan pizza: fior di latte made from cow's milk; or mozzarella di bufala, made from the milk of the water buffalo that live in the country's Campania and Lazio regions. These days, at some farms, the gentle beasts receive massages and listen to classic music as part of their routine to produce the tastiest milk around.

Of course, part of Neapolitan pizza's fame comes from how it's cooked. The dough must be no more than 3mm thick, and must bake for 60 to 90 seconds at a very high temperature – 485°C – inside a wood-burning oven, resulting in a pizza that's crispy but not burnt. It all sounds easy enough, but there is a reason why some pizzamakers are considered true masters: that moment just before a pie becomes a burned mistake often lies in an expert's eye.

But even if you don't have DOC-qualified ingredients or a wood-burning oven, according to Sorbillo, all you really need to make a good pie is flour, yeast, a can of tomatoes and cheese that's made from cow's milk. "It's [how you make] the dough that's essential," he said.

And as with any pastime, pizza-making involves a bit of trial and error. Mistakes and all, the whole process – along with getting to enjoy the final result – is all part of the fun.

"I am lucky," Salvo said. "It's not just my work but my passion and my life." He himself eats a Margherita pizza at least once a day.

Neapolitan pizza dough recipe

By Ciro Salvo of 50 Kalò

450g flour (ideally 00, but can use 0 or 1)
300ml cold tap water
3g fresh brewer's yeast
9g salt

In a large bowl, dissolve the yeast in the cold tap water, and then mix in about two-thirds of the flour with a big spoon until a creamy consistency is formed. Mix in the salt, and then the remaining flour a little bit at a time. Continue to mix until all the flour has been absorbed.

Knead energetically with your hands by folding the dough and pushing it inwards. When the dough is smooth and no longer has lumps, let it rest for 10–15 minutes.

Dust the dough with flour, place it on a table and then give it a few folds, forming it into a spherical shape until it's firm and elastic.

Place dough inside an oiled baking tin and cover, and then allow it to rest and rise for 7–8 hours at room temperature.

Place dough onto a round sheet pan that's been lightly greased with olive oil, and lightly press it with your fingertips until the classical, flat-and-round pizza shape is formed (or into a square if using a square-shaped pan). It should be no more than 3mm thick. Cover and let rest for another 3 hours.

Add tomatoes (or tomato puree) as desired onto the flattened dough, and put pizza on the base of the oven, baking at 250–280 °C for 5–6 minutes. Move pizza to the top rack of the oven and bake for another 6–8 minutes, adding drained mozzarella (if using) only in the last 3–4 minutes. Other ingredients such as extra virgin olive oil and basil should be added at the end of cooking.

1. Make a list of all raw foods (e.g. garlic) and products (flour) mentioned in the text.

Raw foods	**Products (dishes)**
tomato	wine
…	…

2. Make a list of (or highlight in the text) all adjectives in Comparative and Superlative degrees. Pay attention to the context.

3. Read the recipe of Neapolitan pizza and say whether these statements are TRUE or FALSE.

1. First we mix water, yeast and salt.

2. Not all the flour is put into the liquid mixture in one go.
3. The dough is kneaded in the bowl until it is smooth.
4. After that the dough is left to rise for 7–8 hours.
5. The dough should rest in a warm place.
6. Before putting the dough onto the pan, we should grease it a little.
7. Immediately after that, put the pan with the dough into the oven.
8. Pizza should be baked first on the top rack and then – on the bottom.
9. The total cooking time should not exceed 14–15 min.
10. Mozzarella is added at the end of cooking.

4. Explain the meaning of the words from the text:
intangible, ubiquitous, wannabees**,** provenance, heirloom.

THE MYSTERY OF WHY THERE ARE MORE WOMEN VEGANS

By Zaria Gorvett, 18th February 2020

Fulfill the tasks.
https://www.bbc.com/future/article/20200214-the-mystery-of-why-there-are-more-women-vegans

1. Skim the text and formulate 3–4 main ideas of the article.

2. Now scan the text to find all the examples of functional words of Comparing and Contrasting.

3. Give synonyms to the words from the text.

narrator	
sequence	
actually	
significantly	
abundance	
to run the gauntlet	
to scrabmble	
link	
affect	
likewise	
to split	

precocious	
proportion	
to keep up	
justification	
to reinforce	
endorsement	
to unravel	

"Manly man," the narrator observes, as a groom emerges from a house, carrying his bride. "Calm," he marvels, as a man in a packed train carriage smiles tolerantly at the lady who just stepped on his foot. And on it goes… a sequence of scenes depicting men carrying out impressively gallant feats, as an orchestral soundtrack rises to a crescendo. At the end of the advert, a man bites into a burger. The tagline reads: "100% manly man. 100% pure beef".

This McDonald's advert, broadcast in China in 2012, relies on the well-trodden stereotype that meat is masculine. And oddly, there is actually some truth to this. It turns out that – in almost every part of the globe, from Sweden to Australia – there are significantly fewer male vegans and vegetarians. In the US, one survey of 11,000 people found that just 24% of vegans are men.

Anecdotally, this seems to stand up. The tally of famous female vegans is a glittering line-up, reportedly including – deep breath – Natalie Portman, Miley Cyrus, Venus Williams, Ariana Grande, Ellie Goulding, Jessica Chastain, Alanis Morissette, Jane Goodall, Princess Beatrice and Beyonce.

Meanwhile, the cast of male celebrity vegans appears tiny in comparison, though it does feature Benedict Cumberbatch, Peter Dinklage, Zac Efron, and – notoriously – the singer Morrissey, who masterminded a Smiths album called Meat Is Murder and is said to have forbidden his band members from being photographed eating meat.

But why is this the case?

As it happens, psychologists have been aware of the mysterious abundance of female vegans for decades. They've come up with plenty of compelling explanations already – and they don't reflect well on men.

One possibility involves "precarious masculinity" – the idea that men are constantly worrying they will lose their manly status, and therefore feel the need to prove it at every opportunity. For example, when men are forced to do something "girly", like braiding a doll's hair, they tend to want to exhibit their machismo afterwards.

The concept of "precarious masculinity" may be why men feel sensitive about eating feminine foods such as salad.

This could potentially be a major stumbling block for aspiring male vegans, who must run the gauntlet of the red-blooded carnivore stereotype. But where did this come from in the first place?

Steven Heine, a psychologist at the University of British Columbia, suggests that it's largely down to historical factors. "Meat has always been associated with danger, because you used to have to hunt to get it, and status, because it was a prized food and we lived in patriarchal societies – so men arranged that it would go to themselves," he says.

It's also thought to have been perpetuated by marketing. Starting in the 19th Century, when it became more socially acceptable for parties of women to dine alone, restaurants and advertising executives scrambled to decide which foods were suitably feminine. Their verdict? Fussy desserts and dainty salads were for women, while steak was for men.

Fast-forward to today, and we're still passing these views on to the next generation.

Take "soy boys". The Urban Dictionary defines the slang term as applying to "males who completely and utterly lack all necessary masculine qualities," and claims it originates from the (scientifically dubious) link between the over-consumption of soya products and harm to the male physique and libido.

In his research, Heine has found that merely listing the vegetarian foods a person enjoys, below a detailed description of their personality and habits, can be enough to make them seem less masculine. Knowing that, "perhaps some men are concerned about what will happen if they order a salad at a restaurant," he says.

Margaret Thomas, a psychologist at Earlham College, Indiana, agrees. "I don't think people necessarily recognise the extent to which the food they choose to eat affects their identity," she says. Thomas has also found that vegans are seen as less masculine – but only if it's a choice. When her study participants were told that a person had been forced into the diet because of mysterious "digestive issues", they weren't judged so harshly.

Of course, the story of why there are more women vegans isn't all about men. Research has consistently shown that women are more compassionate in general, and particularly when it comes to animals. We're more likely to have a problem with animal use in general and experimentation in particular, more likely to keep pets, and less likely to abuse them.

Likewise, women make up 75% of the members of animal rights groups. In fact, feminists and animal activists have been working together for more than a century. Two prominent campaigners for women's suffrage, Alice Wright and Edith Good, lobbied the United Nations to give animals formal rights back in the 1940s – a proposition which is only just beginning to be considered today.

In 2018, the psychologist Carolyn Semmler set out to uncover if women are better at resolving the so-called "meat paradox" too. "There's a lot of literature about this," she says. "The idea that people claim to love animals – and yet they eat them."

Together with colleagues from the University of Adelaide, Semmler recruited 460 people for the study, and split them into two groups. Both were asked to select a lamb dish that they would like to eat, and then provided with some information.

But while one half was merely asked to read about the nutritional content of their meal, the other was given a breakdown of exactly how lambs are reared and slaughtered, then shown a video of a precocious individual who had learnt to open a farm gate, all by him or herself. Each participant was surveyed at the beginning and the end of the study, to see how they felt and if their attitudes to meat had changed.

“We saw some really interesting things happen,” says Semmler. First of all, most women felt worse after reading about the connection between animals and meat, while the men were more or less unaffected. Second, while the women were generally less attached to meat by the end of the study, the men were more carnivorous than ever.

Women may be better at solving the "meat paradox" – where we are able to care about animals but also be fine with eating them.

“There was a group of male participants who had a really strong reaction to the study – saying that they were going to eat more meat, because they thought we wanted them to eat less.” One explained: “…Based on the line of questioning in this survey, I am concerned that some lunatics might try to ban meat; I had better enjoy as much as possible while I am able.” Though not all the men felt this way, a significant proportion did. The team didn’t get the same response from a single woman.

One possible reason for this is the discrepancy in the ways men and women deal with the meat paradox. A 2013 study, led by Hank Rothgerber from Bellarmine University, Kentucky, found that women are more likely to use “avoidance” strategies to cope, such as avoiding connecting meat with animals.

This is surprisingly easy to implement in everyday life, since most supermarkets, restaurants and food brands tend to helpfully remove the more gruesome clues, such as eyeballs, feet and fur. If animals are depicted in their marketing, they’re usually happy cartoons. Even the language we use helps to keep up the ruse, since we usually to refer to pork instead of pig, mutton instead of sheep, beef instead of cow, etc.

In contrast to the “dissociation” strategy favoured by women, Semmler’s study found that men generally to tackle the troubling reality that they like animals and also eat them more directly, by denying that they can feel pain, suggesting that meat is essential if you want to be healthy, and invoking the hierarchy of the natural world, to justify the idea that humans can do what they like with other creatures.

With this in mind, it makes sense that the female participants would be more affected – since the information they were asked to read snatched their usual coping mechanism

away from them. The men, meanwhile, simply pressed on with their usual justifications and dug themselves in.

But that might not be the only reason. Intriguingly, Semmler says her results fit nicely with what other research has shown about how men and women usually deal with any set of incompatible beliefs or behaviours. “While men tend to go on the attack, women tend to think ‘I’m going to modify my behaviour because the problem is with me – I’m going to accept responsibility for this’,” she says.

For example, when women are forced to confront the unhealthy reality of certain behaviours, such as smoking or sex without condoms – and then remember instances when they have engaged in these risks – in some cases, they change their attitudes and behaviour to a greater extent than men do.

Finally, there’s “social dominance theory”, which suggests that men might find meat more appealing when they’re reminded it’s made from animals, because it reinforces their sense of dominance and superiority – by viewing animals as unworthy of respect, they are asserting their power over them.

There is some evidence to support this idea. A survey of the attitudes of American college students, conducted in 2015, found a link between a preference for a more hierarchically stratified society and the use – and endorsement of the use of – animals.

The link between meat and dominance isn’t just about animals – it also seems to extend to our own species. One early study, conducted in the 1980s by the anthropologist Peggy Sanday, involved comparing the power structures of a hundred hunter-gatherer cultures, some of which relied more on meat for food, and some of which relied more on gathered fruits and vegetables. She found that the meat-based societies tended to be more patriarchal, while the plant-based ones were generally more egalitarian.

This is thought to be because men are more likely to be hunters, so where meat is important they automatically have more power if they want it – which the study findings suggest they do. Meanwhile, where gathered foods dominate, women might use the status this affords them to carve out more equal societies.

Semmler thinks we need a lot more research before we can truly unravel the enigma of the women vegans. But it looks like it’s down to a combination of the empathy gap between the sexes, our different strategies for overcoming the meat paradox, and the uniquely male fear that a salad could undermine their carefully manicured status.

One thing is clear: as the global popularity of veganism gathers pace – the number of US vegans increased by 600% between 2014 and 2017 – women are way ahead.

HOW VERTICAL FARMING REINVENTS AGRICULTURE

By Chris Baraniuk, 6th April 2017

Read the text or follow the link and fulfill the tasks.
https://www.bbc.com/future/article/20170405-how-vertical-farming-reinvents-agriculture

In an old carpet factory on the outskirts of the Belgian city of Kortrijk, an agricultural upheaval is being plotted: growing crops indoors, not out on a farm, stacked layer after layer under candy-coloured lights in an area the size of a studio flat.

It's called vertical farming, and several companies have sprung up over the last 10 years or so, filling old warehouses and disused factories with structures that grow vegetables and herbs in cramped, artificially lit quarters out of the warm glow of the sun.

A firm called Urban Crops is one of them. In its case, a large frame is designed to hold conveyor belt-shunted trays of young plants under gently glowing blue and red LEDs in this former carpet factory.

But their system, largely automated, is still a work in progress. When I visit, a software update, scheduled at short notice, means that none of the machinery is working. Chief executive Maarten Vandecruys apologises and explains that, usually, the hardware allows the plants to be fed light and nutrients throughout their growing cycle. Then they can be harvested when the time is right.

"You don't have the risk of contamination," says Vandecruys as he points out that the area is sealed off. And each species of crop has a growing plan tailored to its needs, determining its nutrient uptake and light, for instance. Plus, in here, plants grow faster than they do on an outdoor farm.

Urban Crops says that vertical farming yields more crops per square metre than traditional farming or greenhouses do. Vertical farming also uses less water, grows plants faster, and can be used year-round – not just in certain seasons. The facilities also can, in theory, be built anywhere.

At Urban Crops, eight layers of plants can be stacked in an area of just 30sq m (322 sq ft). It's not a commercial-sized operation, but rather a proving ground intended to show that the concept is viable.

"Basically, inside the system, every day is a summer day without a cloud in the sky," says Vandecruys.

Vandecruys says it's possible to grow practically anything inside – but that's not always a good idea. He explains that it's more cost-effective to stick to quicker-growing

crops that yield a high market value. Herbs, baby greens for salad and edible flowers, for instance, fetch a lot more per kilogram than certain root vegetables, which are more likely to be grown outdoors the old-fashioned way for some time yet.

By growing plants indoors, you get a lot of fine-grained control you get over the resources your crops need. It allows for rapid growing and predictable nutrient content. The LEDs, for example, can be turned up or down at will and, because they do not give out lots of heat like old filament bulbs, they can be kept close to the plants for optimal light absorption.

Of course, it's possible to produce the same amount of veg that you might get from an outdoor farm – but with far less land at your disposal.

So, how does it actually work? There are a few main models for indoor agriculture that vertical farmers tend to choose from: hydroponics – in which plants are grown in a nutrient-rich basin of water – and aeroponics, where crops' roots are periodically sprayed with a mist containing water and nutrients. The latter uses less water overall, but comes with some greater technical challenges. There's also aquaponics, which is slightly different, in that it involves breeding fish to help cultivate bacteria that's used for plant nutrients.

Urban Crops has opted for hydroponics. Vandecruys points out that they recycle the water several times after it is evaporated from the plant and recaptured from the humid air. It's also treated with UV light to curb the spread of disease.

Perhaps the key benefit of vertical farming is that it uses far less water. "We made an estimation with oak leaf lettuce and there we are actually at, say 5% [water consumption], compared to traditional growing in fields," explains Vandecruys.

But Urban Crops doesn't plan to make its money from the sale of crops. It plans to make money on the sale of its vertical farms.

It has designed contained growing systems as a product in and of themselves – people will be able to buy them in order to grow food in relatively confined spaces – potentially bringing farming to urban areas or complexes like the campus of a university. The apparatus can also be installed alongside existing plant production lines at greenhouse farms.

One of the biggest names in vertical farming, however, has a different business model. AeroFarms in New Jersey, USA, has opened what they say is the world's largest indoor vertical farm – with a total of 7,000 sq m (70,000 sq ft) floor space – and they're hoping to produce tasty greens in massive quantities.

Ed Harwood is the inventor and agricultural expert who came up with the technology that has made this possible. He got the idea years ago while working for Cornell

University, where aeroponic systems were being used to grow plants in a lab setting. Why, he wondered, was this approach not being used on a bigger scale?

"I kept asking, 'how come' – people said, 'Oh, it would never make money, the sun is free, it's expensive to add lights and everything else, it won't happen'," recalls Harwood.

But he wasn't satisfied with that. After years of experimentation he came up with a system and nozzle design for spraying the aeroponic mist onto his plants' roots. At AeroFarms, the roots grow through a fine cloth rather than soil. But the details of how he solved the key problem – keeping the nozzles clean over time – remain a trade secret.

"Every nozzle I purchased off the shelf had significant issues," says Harwood. "I had to do something about it – it was just a cool moment of, I guess, serendipity." But he's not telling anyone how he did it.

Like Urban Crops, AeroFarms is prioritising the cultivation of fast-growing salad veg and greens. Harwood believes there is a demand for such produce grown locally in big facilities like theirs that could one day be a feature of city suburbs. And he also promises the guaranteed crunchiness and freshness that consumers want.

Harwood is firm in his belief that the business he and his colleagues have put together can be profitable. But there are still those who remain sceptical.

Michael Hamm, a professor of sustainable agriculture at Michigan State University, is one of them. He points out that vertical farms depend on constant supplies of electricity, much of which will come from fossil fuel sources.

"Why waste that energy to produce a whole lettuce, when you can get light from the sun?" he says.

And he points out that it just doesn't make economic sense to grow some crops this way: "At 10 cents a kilowatt hour, the amount of energy it would take to produce wheat would [translate to] something like $11 for a loaf of bread."

He does acknowledge a few of the benefits, though. If the indoor systems are well-maintained, then the technology should in theory allow for reproducible results with every harvest – you'll likely get the same quality of crops every time. Plus, while it costs a lot of money to set up a vertical farm in the first instance, it's potentially a more attractive option to people getting into the agriculture business for the first time – they won't need to spend years learning how to contend with the vagaries of the sun and seasons. For that, there's no substitute yet for experience.

With the development of vertical farming technologies, and the likely fall in cost associated with them in coming years, some are betting that all kinds of people will want to start growing their own greens – even at home. There's been a spike in home beer brewing – might we see a spike in farming at home, too?

Neofarms is one start-up based in Germany and Italy that is anticipating this. Its founders, Henrik Jobczyk and Maximillian Richter, have developed a prototype vertical farm about the size of a household fridge-freezer.

"We designed it in standard kitchen closet sizes," explains Jobczyk, who adds that their plan is to make the device available as an integrated or standalone design, depending on the customer's preferences.

People who choose to grow their salad veg at home will pay about two euros (£1.71/2.13) per week in energy costs with this system for the privilege, the pair calculate. And they would also have to keep the Neofarms device clean and constantly topped up with water. But in exchange they will have the freshest produce possible.

"With the plants growing in the system, you know about the conditions they were raised in – that gives you control and knowledge," says Jobczyk. "But also it's the freshness, one of the biggest problems with fresh veg – especially the greens – is the field to fork time, the time between harvest and consumption."

Future supermarkets, though, might be filled with miniature vertical farms of their own.

If you pick the plants yourself and eat them straightaway, you might enjoy a richer wealth of vitamins and other nutrients – which can be lost during packaging and transportation. Many consumers already grow their herbs on a window box, but that is a low-cost and low-maintenance activity. It remains to be seen whether the same people would be interested in making the conceptual leap that comes with bringing a mini vertical farm into their own kitchen.

Jobczyk and Richter will have to wait to find out – they're planning more testing of their device later this year, with a public launch potentially following sometime after that.

Ed Harwood, for one, thinks vertical farming technologies might help to bring agriculture closer to the consumer. But he also sticks by his belief that farming on giant scales is here to stay.

"Irrespective of the number of recalls, I think we've improved food safety over all, we're feeding more people with fewer resources," he says.

One of the downsides of this is that children have to be introduced to the idea that their food is grown somewhere – it doesn't come from the supermarket, but a field or factory. Future supermarkets, though, might be filled with miniature vertical farms of their own.

"For the child who says their food comes from the grocery store," says Harwood, "they might one day be right."

1. Find the words which mean the following:

the outer parts of a town or city	
a violent or sudden change	
a large building for storing things before they are sold, used, or sent out to shops	
a substance that provides nourishment essential for the maintenance of life and for growth	
the process of making something dirty or poisonous	
a glass building in which plants that need protection from cold weather are grown.	
a place, amenity, or piece of equipment provided for a particular purpose	
suitable or safe for eating	
turn from liquid into vapour	
a rough calculation of the value, number, quantity, or extent of something	
restricted in area or volume	
a cylindrical or round spout at the end of a pipe, hose, or tube used to control a jet of gas or liquid	
good luck in making unexpected and fortunate discoveries	
act as a forerunner or precursor of smth.	
the process or period of gathering in crops	
not taking (something) into account; regardless of	

2. In the article, find the differences between vertical farming and traditional farming. Put the results into a table, e.g.

	Traditional	Vertical
Location	outdoors	indoors
Light		
Management		
Productivity		
Water consumption		
Growth rate		
Terms		
Environmental effect		
Place		

Use of space		
Growing base		
Drawbacks		

Choose 3 points and speak about them.

FEEDING PEOPLE AFTER THE APOCALYPSE

Follow the link to watch the video and complete the tasks.
https://www.bbc.com/reel/playlist/the-truth-about-food?vpid=p07j9z7k

1. Write no more than 3 words and / or numbers in each gap.

1. It's difficult to predict the possibility of _____.
2. Dr Denkenberger is the ____ of the organisation AllFed.
3. After a catastrophe, the Earth may cool about a few ____.
4. After consuming what people have harvested, they will have to eat _____.
5. Alternate food sources may include leaves, from which ____ can be produced.
6. Great amount of fish can be fount at up to ____ down in the ocean.
7. Mushrooms can reproduce very quickly since they have about ____ spores.
8. Dr Denkenberger works at the _____.
9. The humanity may have great perspectives unless it ____ itself.

2. Match the words from the recording and their definitions

1	impact	a	different from the usual
2	to estimate	b	to react
3	alliance	c	to gain speed
4	alternate	d	to calculate approximetely
5	to respond	e	to gather
6	to harvest	f	existing in possibility
7	to scale up	g	collision
8	potential	h	a means of guaranteeing protection or safety
9	to accelerate	i	to increase
10	insurance	j	a union of people or organisations with similar aims

3. In 3 groups, suggest other alternative food sources.

SPACE EXPLORATION. ADDING INFORMATION

Follow the link to watch the video on Mars missions
https://www.youtube.com/watch?v=pwipxdQ74pU

Write a short history of Mars exploration using words and expressions for sequencing events and adding information, e.g.
The first mission to Mars was launched in .....
The next spacecraft was sent .....
Another ....

Work in 2 groups
Watch the videos and make a short report on colonising Mars and Moon. Use Sequencing words and words of Adding information as much as possible. Then discuss whch of the projects is more viable.

WHAT WILL SPACEX DO WHEN THEY GET TO MARS?

https://www.youtube.com/watch?v=FYU-N2RWfso

WHAT IF WE TERRAFORMED THE MOON?

https://www.youtube.com/watch?v=2M5cavBR5Zc

Навчальне видання

READING AND LISTENING WITH BBC
Self-learning guides on reading and listening tasks to module “Searching for and processing information”. Part 1.
For first-year students of all departments

ЧИТАЄМО ТА СЛУХАЄМО ВВС
Методичні вказівки
до виконання самостійних завдань з читання та аудіювання
до змістовного модуля «Пошук та обробка інформації». Частина 1.
Для студентів 1 курсу всіх спеціальностей

Англійською мовою

Укладачі: Лазарєва Ольга Ярославна
Ковтун Олена Олександрівна
Чудовська Тетяна Сергіївна

В авторській редакції

План 2022 р., поз. 231

Підп. до друку 29.06.2022 Формат 60×84 1/16. Папір офсетний.
Riso-друк. Гарнітура Times New Roman. Ум. друк. арк.1,5.
Наклад 50 прим. Ціна договірна.

Видавничий центр НТУ «ХПІ».
Свідоцтво про державну реєстрацію ДК № 5478 від 21.08.2017 р.
61002, Харків, вул. Кирпичова, 2

Електронне видання