



M1 ISC

Semester 8 2022 - 2023

VR / AR AERONAUTICS TOIEC

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INFORMATIONS UTILES ET CONSEILS

Description du cours

Ce cours a pour but de vous permettre de perfectionner votre niveau d'anglais dans les 5 activités langagières, à savoir la compréhension de l'oral (CO), la compréhension de l'écrit (CE), l'expression écrite (EE), L'expression orale en continu (EOC), l'expression orale en interaction (EOI).

Votre seul investissement pendant les TD ne saurait suffire. Il conviendra donc de poursuivre et d'approfondir les activités de classe par un travail personnel régulier. Vous trouverez sur eCampus la brochure « KEEP CALM AND LEARN ENGLISH » et différentes sections (grammar / vocabulary / skills / TOEIC) qui vous apporteront une aide précieuse. Vous y trouverez aussi une sitographie vous indiquant un certain nombre de ressources utiles en ligne.

Votre compte **eCampus** doit être activé dès le début d'année et consulté régulièrement. Certains devoirs devront y être déposés.

Modalités d'évaluation

Session 1:

100 % Contrôle Continu (25% test expression écrite, 25% test TOEIC Reading, 25% expression orale, 25% test TOEIC Listening)

Il n'y a pas d'examen final en session 1.

Votre participation orale régulière et les devoirs rendus seront pris en compte dans la notation (la fréquence comptera autant que la qualité de vos interventions donc même les élèves en difficultés peuvent avoir une bonne note).

Les évaluations sont annoncées à l'avance, en cours et sur eCampus. Toute absence non justifiée lors d'une évaluation entrainera un 00/20.

Session 2:

- 0,60% examen écrit
- 0,40% report de la moyenne des notes d'oral du S2

Assiduité aux cours

Votre **assiduité** ainsi que votre **ponctualité** seront prises en compte. En cas de retards fréquents ou conséquents, l'accès au cours ne vous sera pas autorisé.

Peuvent servir de justificatif : les convocations à des examens, à la préfecture, les certificats médicaux datés d'avant ou du jour du cours. Un billet d'avion n'est pas un justificatif. Votre justificatif devra parvenir à votre professeur par mail en précisant vos nom, prénom, année, filière et groupe <u>avant le cours suivant</u>. Aucun justificatif ne sera accepté après le jury.

En cas d'absence prévisible, merci d'avertir votre enseignant au plus vite.

Bon semestre à tous !

A.C. COUTURIER

ORAL PRESENTATION

Semester 2

Make your own PechaKucha*!

Get ready to give a presentation about...

...what you really care about, something that really matters for you, one of your hobbies, someone you really like ... what should be done / changed to make the world a better place

PechaKucha (Japanese for "chit chat") is the world's fastest-growing storytelling platform, used by millions around the globe.

PechaKucha's 20x20 presentation format shows your 20 chosen images, each for 20 seconds. In other words, you've got 400 seconds to tell your story, with visuals guiding the way.

PechaKucha is the ideal tool to share passions and drop some knowledge.

1 student

6 minutes 40

20 slides with pictures – no words

20 seconds of commentary per slide

No reading – just 20 keywords on some paper if needed



YOU WILL BE ASSESSED ON...

- the quality of your English (pronunciation, vocabulary, grammar, fluency)
- your communication skills (eye contact, voice, fluency)
- the respect of the Pecha Kucha specifications.

PART 1

VIRTUAL REALITY & AUGMENTED REALITY



Great innovation or dangerous asset ?
To what extend are these technologies double-eged tools ?

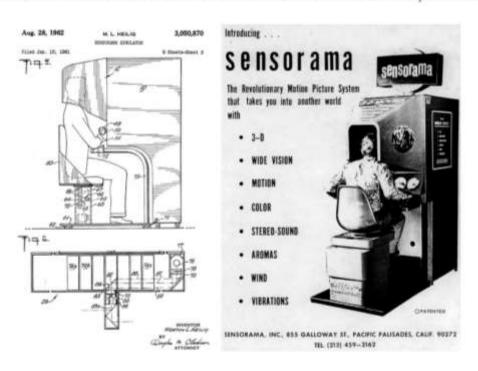
1 When was virtual reality first mentionned?

In 1935, science fiction author Stanley Weinbaum wrote

Pygmalion's Spectacles. In this fictional short story, the main character
meets a professor who invents a pair of goggles that allowed him to view a
movie with sight, sound, taste, smell, and touch. From fiction to reality...



1957: Morton Heilig, a cinematographer, invented the Sensorama, a theatre cabinet multimedia device that offered viewers an interactive experience.



Watch this interview of film maker Morton Heilig and get ready to explain what Sensorama is.
https://youtu.be/vSINEBZNCks



3	Ask 4 questions to Morton Heiling about his invention.

1961: Comeau and Bryan, two Philco Corporation engineers, created the first head-mounted display (HMD) called the Headsight. The display had two video screens, one for each eye, as well as a magnetic tracking device.





It was the first motion-tracking device ever created. Headsight was primarily used to move a remote camera allowing a user to look around an environment without physically being there.

1966: **Sword of Damocles** - Ivan **Sutherland** and his student Bob Sproull created the **first VR / AR head -mounted display** ((HMD)) that was connected to a computer and not a camera. Large and very heavy, it was suspended from the ceiling (hence its name). The used would need to be strapped into the device. The computer generated graphics were very primitive wireframe rooms and objects.



https://youtu.be/eVUgfUvP4uk

4 In groups. Watch this video about virtual and augmented realities. Take notes. https://youtu.be/f9MwaH6oGEY





(5) Share your findings. Write a definition of each reality and recap the key elements you will remember.

Virtual reality	Augmented reality
Definition	Definition
First apparition	First apparition
Example(s)	Example (s)

CHECK 1	DUALITY – CONNECTED CHOICES
	AR is amazing and useful. VR is amazing and useful.
вотн	⇒ BOTH AR and VR are amazing and useful.
(2 choices)	→ AR and VR are BOTH amazing and useful.
(= 00.000)	⇒ BOTH OF THEM are amazing and useful.
EITHEROR	You can use AR or you can use VR. You can't use both.
(1 choice)	→ You can use EITHER AR OR VR.
	You can't use AR and you can't use VR.
NEITHERNOR	→ You can use NEITHER AR NOR VR.
(0 choice)	→ You can use NEITHER OF THEM .
(5 5.16162)	→ You can't use AR and you can't use VR EITHER.

6 Write sentences to recap what you know about AR & VR.

Remember.. This reality is / these realities are...

There is a new video game / there are new video games

2

AUGMENTED REALITY, VIRTUAL REALITY AND MIXED REALITY

1 Watch the video. Complete the chart below.

https://youtu.be/3mr_S5mOtsw



How it works	Example	SCAN ME
	How it works	How it works Example

2 Brainstorm the different fields where these realities can be used.

Watch the video and complete your list.

https://youtu.be/cRCLk5w6ad4



(3) Watch the coolest VR & AR you missed at CES 2022! Take notes.

https://youtu.be/ItjBSQTlpk8



- 4 Pair work. Discuss the following topics:
 - 1) Which of these technologies have you already used? What did you feel? Is one of them part of your everyday life?
 - **2)** AR, VR, MR? According to you, which technology is going to develop in the future? Can you see other fields?

CHEC	K 2	RELATIVE PRONOUNS	
Who	Relates to people (Si	ubject) The musician who wrote this song is French.	
Whom	Relates to people (C	Object) I know the boy whom sits next to you.	
Which	Relates to animals and	d objects This is the cake which Mary made.	
Why	Refers to reaso	n Do you know the reason why the market is closed today?	
When	Refers to time	The day when the concert takes place is Saturday.	
Where	Refers to place	s This is the house where my son was born.	
Whose	Refers to possess	ion The boy whose phone just rang should stand up.	
That	Relates to people, anii things	mals and 12th September is the date that I was born.	

(5) Complete these sentences with a relative pronouns.



- 1. AR is a technology appeals to many people.
- 2. It is an enhanced version of reality live direct or indirect views of physical real-world environments are augmented with superimposed computer-generated images.

RELATIVE PRONOUNS KC page 62

- 3. Unlike virtual reality,requires you to inhabit an entirely virtual environment, augmented reality uses your existing natural environment and simply overlays virtual information on top of it.
- 4. Marker-based augmented reality uses a camera and some type of visual marker to produce a result only the marker is sensed by a reader.
- 5. To understand how augmented reality technology works, one must understand its objective: to bring computer generated objects into the real world, only the user can see.
- 6. Peopleinvented AR are really smart.
- **7.** Augmented reality devices are devices are often controlled either by touch a pad a. or voice commands.
- **8.** ARletters stand for Augmented Reality is a common device.

device.

6 You work for a science magazine. Write a 10-line paragraph to explain the difference between virtual reality, augmented reality and mixed reality. Illustrate with examples. Explain which technology is the most useful. Give your opinion. Use Check 1 and Check 2.

CONNECTING YOUR IDEAS This brochure page 80 1 So Listen and take notes about CAVE2.

2 Listen again and use your notes to answer these questions.



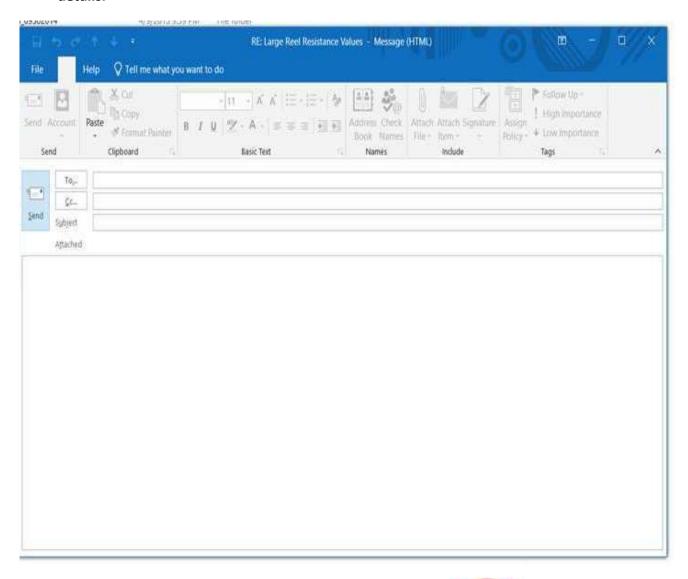
https://youtu.be/uKeL0CXp54I

1) What are the dimensions of **CAVE2**?

- 2) What are its main characteristics?
- 3) When was the original **CAVE** invented?
- 4) How is **CAVE2** operated?
- 5) In what areas can CAVE2 be used?

③ You are a	journalist at the preson	entation of CAVE2. As	k 4 questions about t	the device.

4 You are interested in buying CAVE2. Write an email to the commercial of Mechdyne Corporation explaining where you work and why you would need such a device. Ask for details.





OCULUS RIFT

1 Listen to the audio circle the words you hear: https://youtu.be/ADB36Esss94

hardware	software	mobile phone	decade
na aware	Joitware	mobile priorite	accaac

industry	interactive	excited	deception

virtual reality invention market television



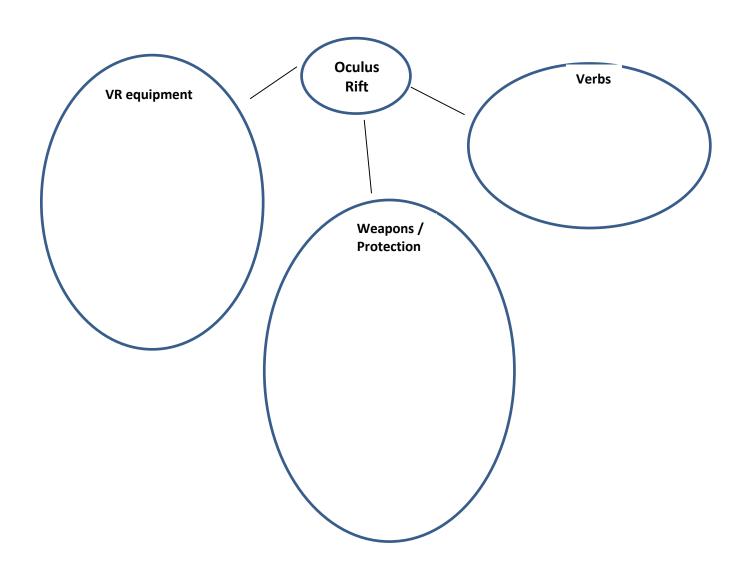
2 Listen again and take notes.

- 3 Listen again and use your notes to answer the following questions.
- 1/ Who is Palmer Luckey?
- 2/ Why is he being interviewed?
- 3/ What does his company develop?
- 4/ Quote two things his company Oculus can do.
- 5/ What is the goal of Oculus?
- 6/ Who is really thrilled about the deal?
- 4 Work on pronunciation.
- 1/ Which words do these phonetic transcriptions correspond to?
 - a. /əˈdɒpʃən/
- e. /ˌækwɪˈzɪʃən/....
- b. /nɪˌgəʊʃɪˈeɪʃən/.....
- f. /dɪˈrɛk[ən/

c.	/rɪˈækʃən/	g. /ˌɛkspləˈneɪʃən/
d.	/ˈtɛlɪ vɪʒən/	h. / a·aiʊmɛnˈteɪ(ən/

- 2/ Look at the transcriptions. Highlight the stressed syllables.
- 3/ Circle the exception.
- 4/ Watch the video again and tick the words that Palmer Luckey uses. Check their pronunciation.
 - (5) Watch video 2 and write down as many words as possible. https://youtu.be/5q6BcQq_yhw





5

THE VIRTUAL GENIUS OF OCULUS RIFT

1 Read the text below.

by Lev Grossman, March 26, 2014 http://time.com/39577/facebook-oculus-vr-inside-story/

How a 19-year-old hacker behind Oculus Rift **set out** to invent a gaming headset but **ended up** reviving a dead technology and building a global communications platform, worth \$2 billion to Facebook in a surprise deal announced this week.

On March 26, Facebook announced that it was purchasing Oculus VR, the company Palmer 5 Luckey started in 2012, in a deal worth \$2 billion. The social-networking giant is getting top-flight engineering expertise as well as the technology behind the company's flagship and only product, a virtual-reality headset. "Mobile is the platform of today, and now we're also getting ready for the platforms of tomorrow," Zuckerberg said in a press conference. "Oculus has the chance to create the most social platform ever and change the way we work, play and 10 communicate."

Palmer Luckey **grew up** in Long Beach, Calif., the son of a housewife and a car salesman. "Self-taught!" is how he describes himself. "Explore the world around you, **take** things **apart**, **put** 'em **back** together. You can learn a lot if you do nothing but spend your entire life in your garage working on projects or in your room reading on the Internet." As a teenager one of Luckey's

15 hobbies was **taking apart** old video-game consoles and reassembling them inside portable cases. Another one was virtual reality. It was an **odd** hobby for a person Luckey's age because the received wisdom at the time was that VR was a failed technology. Everybody has an idea of what VR is, or what it's supposed to be: a simulated, three-dimensional, interactive world that surrounds you completely, just like in science-fiction classics (Tron, Star Trek, The Matrix). As 20 Luckey puts it, "the idea existed, the will existed, the people existed, the demand existed—and

the technology did not."

Luckey's device wasn't like other headsets. It was designed to run games and to immerse you in them. It ran fast, and its field of view was very wide: the display wrapped around to eat up your peripheral vision, putting you well and truly in another world. "That's the only way to get

25 any kind of immersion," Luckey says. "I didn't want to just have a TV you could wear."

Put it **on** anyway and you'll get the rare sensation of experiencing a technology that is genuinely new. Google Glass feels like what it looks like: you put it on and think, Yup, it's a pair of glasses with a tiny screen in one lens. Oculus Rift is different. It's not what you expect.

The first time I tried the Rift, it showed a simulation of a **craggy**, rocky mountainside. I turned my head experimentally, and the view changed, with no discernible lag, just as it would have in reality. Instinctively my brain started looking for the **edge** of the image—but it didn't come. I kept turning until I was looking all the way behind me. There was nothing but mountain back there. Then I looked up and watched snowflakes **sift down** out of a grey sky straight into my face. That's when my brain admitted defeat. It surrendered to the illusion that it was in another world. The Oculus Rift is the first visual medium that doesn't have a **frame** around it. The illusion

of being on a **cliff edge** is tenacious. "You can't do that on a TV monitor, you can't do that on a phone. You've never been able to do that before in the history of humankind. You know you're not going to fall, but your brain's saying, Don't take that step." When you're in the Rift you become the camera. You control the point of view with your body, the way you would in reality.

40 "Zuckerberg got so excited about the vision of what we were doing and about the potential that this is truly the next computing platform and we started to believe it too". The news that Facebook was acquiring Oculus was not received with universal happiness in the gaming community that had backed the company in the first place. Zuckerberg clearly has a lot of faith in the Oculus team, because as far as they've come, there are a lot of technical challenges left

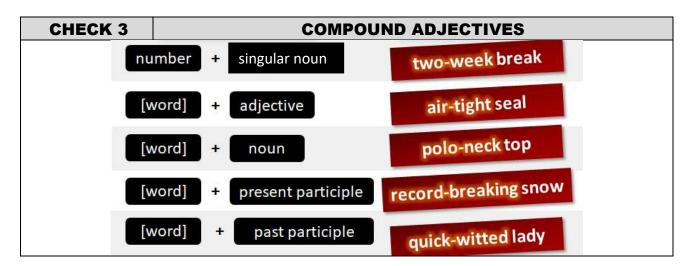
Α

В

•	r mouth, your facial expressions, your gaze. That's oment virtual reality is still a pretty lonely place.
② Work on words.	
1/ Match the phrasal verbs from the text with the absorb, be raised, wear, undertake/ begin, enveloped to the control of the c	neir synonyms: disassemble, fall lightly, finish, fix, lop
- set out (l.1):	- wrap around (l. 23):
- end up (l.1):	- eat up (l. 23):
- grow up (l.11):	- put on (l. 26):
- take apart (l. 12, 15):	- sift down (l. 33):
- put back (l. 12):	
2/ Reformulate the following expressions with	n your own words.
-self-taught (l.11):	
-received wisdom (l. 16):	
-surrender (l. 31):	
-back something or someone (I. 39):	
3/ Translate the three sentences highlighted in	
В	
C	
③ In pairs, answer the following questions.	
1/ What does the Oculus Rift headset feel like?	

45 to solve before virtual reality can become a social medium at all. It will have to track more than

- 2/ How different is the Oculus Rift experience from that of any other existing tech device?
- 3/ Has virtual reality always been really fashionable?
- 4/ What effect does VR have on the brain?
- 5/ What do you know about Palmer Luckey's background?
- 6/ How did Palmer Luckey learn his skills?
- 7/ How did people react to Zuckerberg's purchase of the Oculus Rift company?
- 8/ What attracted Mark Zuckerberg in Oculus Rift?



4 Translate the compound adjectives from the text.



(5) Imagine a compound adjective for each of the following sentences.

ADJECTIVES

- 1. This rocket flies fast. This is arock KC page 78
- 2. Thomas Pesquet is an astronaut with blue eyes. He is aastronaut.
- 3. His parents and teachers educated him very well. He is a.....child.
- 4. I make all my cakes at home. All my cakes are......
- 5. This alien has three heads. This is aalien.
- 6. The NASA is famous all around the world. It is aorganisation.
- 7. This student is 42 yers old. This is astudent.
- 6 Groups of 3, 4. Discuss Mark Zuckenberg's quote: "Oculus has the chance to create the most social platform ever and change the way we work, play and communicate."



CONNECTING
YOUR IDEAS
This brochure page 80

6

5

30

POKEMON GO BRINGS AUGMENTED REALITY TO A MASS AUDIENCE

1 Read the text.

By Nick Wingfield and Mike Isaac July 11, 2016

https://www.nytimes.com/2016/07/12/technology/pokemon-go-brings-augmented-reality-to-a-mass-audience.html

SAN FRANCISCO — There are video games that go viral overnight, causing people to **coop** themselves **up** in their homes for days to play. But the opposite has happened with Pokémon Go, a free smartphone game that has **soared** to the top of the download charts: It has sent people into streets and parks, onto beaches and even out to sea in a kayak in the week since it was released. The game — in which players try to capture exotic monsters from Pokémon, the Japanese cartoon franchise — uses a combination of ordinary technologies built into smartphones, including location tracking and cameras, to encourage people to visit public landmarks, seeking virtual loot and collectible characters that they try to nab.

Boon Sheridan, a resident of Holyoke, Mass., has seen the activity firsthand. His home, a converted gable-roofed church that once attracted **worshipers**, had without his knowledge been designated a Pokémon "gym," a place where players who reach Level 5 in the game must go to train their Pokémon characters. In the last week, as the game became the most downloaded and top grossing app, he has been wondering how to explain to neighbors all the people who congregated on the sidewalk and pulled up at **odd hours**. "I want to make sure I tell them, 'Hey, I'm not a drug dealer," Mr. Sheridan said. "I know there are people pulling up in front of the house all the time but trust me I have no say in this."

On Sunday, San Francisco's parks and downtown were crawling with Pokémon Go players while in Washington, the White House and the Pentagon have been designated official Pokémon gyms. A bar in Harrisonburg, Va., was offering a 10 percent discount to Pokémon Go players on a specific team, while a tea shop in Japantown in San Francisco offered a "buy one tea, get one free" deal to Pokémon Go players. The number of daily active users on Android devices in the United States alone was closing in on the usage of Twitter, the data analytics firm SimilarWeb estimated.

This week, Central Park earned a new distinction on the city's grid: It became the go-to hunting ground for swarms of people playing Pokémon Go.

Pokémon Go represents one of those moments when a new technology — in this case, augmented reality or A.R., which fuses digital technology with the physical world — breaks through from a niche toy for early adopters to something much bigger. The idea behind the technology is to overlay digital imagery on a person's view of the real world, using a smartphone screen or a headset.

In the case of Pokémon Go, players traverse the physical world following a digital map, searching for cartoon creatures that surface at random. People look through their smartphone cameras to find Pokémon. When an animated creature appears, they **toss** Pokéballs at it until it is subdued.

But Pokémon Go's public nature is also causing **unforeseen** side effects, attracting crowds that disturb homeowners and creating opportunities for criminals to **lure** players to **remote** areas where they can be **targeted for theft**. In Australia, police have issued tips for how roving Pokémon Go players can safely play the game.

40 Many technology companies thought A.R. might first take off through specialized business applications that, for example, allow architects to visualize finished building projects in situ. Instead,

it took a game based on a beloved entertainment franchise from the mid-1990s in Japan to help the technology go mainstream.

Pokémon, a hybrid of the words "pocket" and "monsters," belongs to the Pokémon Company, which is partly owned by Nintendo, the Japanese game pioneer, which has struggled to adapt to the era of gaming on mobile devices like smartphones and tablets. In the cartoon, Pokémon trainers use characters to battle each other for sport. The uptake of Pokémon Go, which is so far available only in the United States, Australia and New Zealand, has been so furious that it sent Nintendo's market capitalization soaring \$9 billion in the last few days.

Pokémon Go, though, is actually the work of a start-up, Niantic Inc., which was created inside Google and spun out of the company last year. Niantic's first game, a science-fiction conspiracy thriller called Ingress, was made possible by Google's digital mapping service. About 15 million users have downloaded Ingress, and there are a little over one million active players a month, said John Hanke, Niantic's chief executive.

55

2 Answer the questions below.
1/ What does Pokemon stand for?
2/ Explain what the game Pokemon Go consists in.
3/ What kind of technology does it use?
4/ What kind of problems does it cause?
5/ Have you ever played Pokemon Go. How did you like it?
6/ Use the context to translate the words in bold character. Learn them.
3 Ask 5 questions to the inventor of Pokemon Go.
-

QUESTIONS KC page 42 This brochure pages 66 - 73

ASKING

18

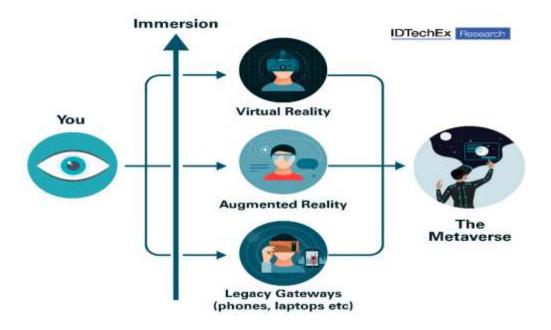
VR AND AR TRENDS FOR 2023

Augmented reality is obviously gaining in popularity. The global virtual and augmented reality (VR and AR) technologies market is expected to reach \$142.4 billion by 2023, up from \$13.4 billion in 2018. That's not all, though. Demand is expected to be driven by emerging trends such as increasing convergence between wearable devices and augmented reality (AR). It is anticipated that 1.4 billion people would utilize augmented reality on their phones alone by 2023.

2022 was a turbulent year for **Extended Reality (XR)**. The popularization of the metaverse concept raised massive interest in Augmented and Virtual Reality (AR/VR) devices as the gateway to this future vision of the internet, with excitement gathering over an expected revolution in how we communicate. Arguably "metaverse" became one of the words of the year. Studies show that this technology has only just taken off, and it is predicted that by 2023 the global AR and VR market will grow to reach \$209 billion. Not only that but the growth of this technology is also reflected in the forecasts for global downloads of AR and VR apps, which stand at 5.5 billion.

The Metaverse has Driven Hype but Caused a PR Problem

However, as the year wore on, a problem became apparent. CEO of <u>Apple</u>, Tim Cook, stated in a recent interview with *Bright* magazine, "I'm really not sure the average person can tell you what the metaverse is". Many investors cannot either and a sharp transition from hype to disillusionment is underway.



1 Give your definition of the metaverse.

- 2 Watch these videos.
 - → Oasis, Spielberg's vision of the metaverse in *Ready Player One* (2018).

https://youtu.be/zv7itGJHptQ



→ Trapped in the metaverse.

https://youtu.be/rtLTZUaMSDQ



→ Ready Player One becomes reality. https://youtu.be/3A-1gK9gDuU



- 3 By pairs. You are journalists. Write a 15-line article to tackle the issue of the Metaverse.
- 4 Pick one field. Browse the web to get information on the 2023 trends of AR & VR. Get ready to present the innovations in your field to the class.

1/ education	2/ defense	3/ entertainment	4/ healthcare	5/ shopping
6/ retail	7/ NFTs	8/ tourism	9/ art & design	10/ real estate
11/ automotive industry		12/ architecture	13/ recruitment	14/ sports
15/ distance working		16/ fitness	17/ wellbeing	18/ social
19/ hobbies	20/ law enforce	ement	21/ news and journa	lism

PART 2

AERONAUTICS



Is space still an option?

1 Group work. List the words related to planes, aeronautics.

Means of transportation

Parts of a plane

Jobs

Famous people

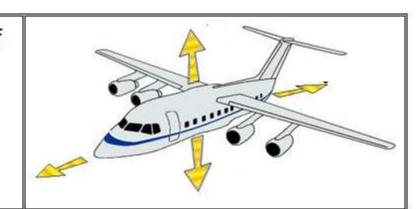
2 Complete the drawing with the correct force. Learn them!

Four forces of flight

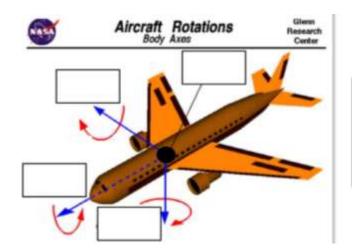
Upward =

Downward = Backward =

Forward =



(3) Complete the diagram with the complete words or numbers.



- 1. Pitch axis
- 2. Roll axis
- 3. Yaw axis
- 4. Center of gravity

n*

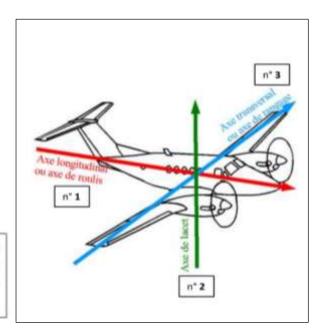
The imaginary line which extends crosswise, wing tip to wing tip, is **the lateral axis**. Motion about the lateral axis is pitch and is produced by movement of the elevators at the rear of the horizontal tail assembly.

n*

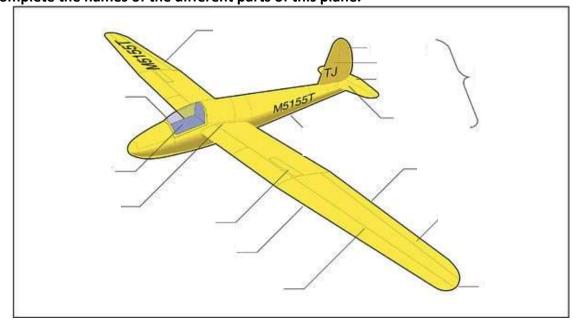
The imaginary line which passes vertically through the center of gravity is the vertical axis. Motion about the vertical axis is yaw and is produced by movement of the rudder located at the rear of the vertical tail assembly.

n*

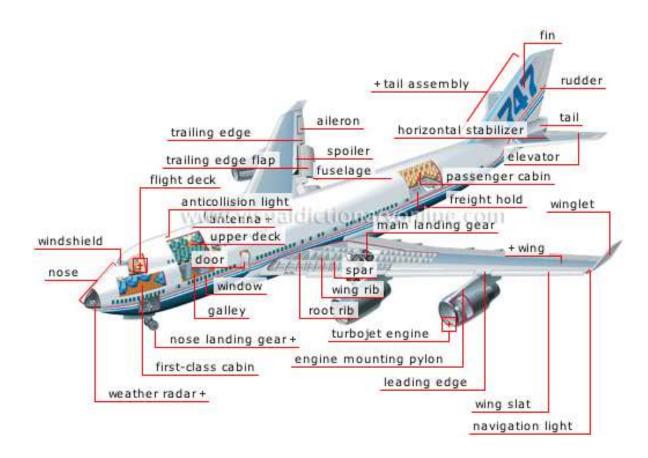
The imaginary line that extends lengthwise through the fuselage, from nose to tail, is **the longitudinal axis**. Motion about the longitudinal axis is roll and is produced by movement of the allerons located at the trailing edges of the wings.



(4) Complete the names of the different parts of this plane.



(5) Guessing game. Give a definition to your classmates and make them guess the word. Give them a word and ask them to define it.



- **6** Scan this QR code and check the words you know in this aeronautics glossary.
- $\blacksquare \ \, \texttt{http://vankata.be/aviationbg/En/Info/Gloss/Aeronautics_gloss.htm} \\$



Write down 12 new words you will remember.

English	French	English	French

1 Before watching the video, try to give a definition of aerospace engineering.

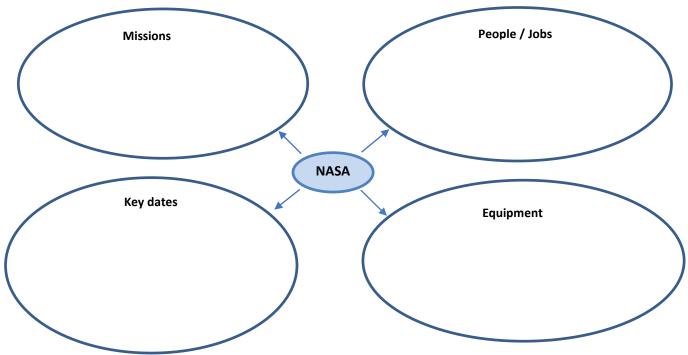
- 2 Can you give examples of the different types of engineering jobs in aerospace?
- (3) Listen and take notes. https://youtu.be/STYw2OTOveY



- 4 Now watch the video and complete your notes.
- **⑤ Y**ou are an aerospace engineer. You give a presentation of your job to M1 ISC students.

HISTORY OF NASA

1 Anticipation. What words come to your mind when you think of NASA?



② Group work. Do you remember NASA's logo?

Draw it on the sheet of paper given by your teacher. Don't forget the colors!

(3) Read the text and complete the grid below.

The National Aeronautics and Space Administration (NASA), is responsible for unique scientific and technological achievements in human spaceflight, aeronautics, space science, and space applications that have had widespread impacts on our nation and the world. Forged in response to early USSR space achievements, NASA was built on the National Advisory Committee for Aeronautics (NACA), and other government organizations, as the locus of U.S. civil aerospace research and development.

When NASA opened for business on October 1, 1958, it accelerated the work already started on human and robotic spaceflight. NASA's first high profile program was Project Mercury, an effort to learn if humans could survive in space. This was followed by Project Gemini, which used spacecraft built for two astronauts to perfect the capabilities needed for the national objective of a human trip to the Moon by the end of the 1960s. Project Apollo achieved that objective in July 1969 with the Apollo 11 mission and expanded on it with five more successful lunar landing missions through 1972. After the Skylab and Apollo-Soyuz Test Projects of the mid-1970s, NASA's human spaceflight efforts again resumed in 1981, with the Space Shuttle program that continued for 30 years. The Shuttle was not only a breakthrough technology, but was essential to our next major step in space, the construction of the International Space Station.

Over the last 60 years NASA has continued to push the boundaries with cutting-edge aeronautics research that has dramatically changed the way we build and fly airplanes. NASA has also completed the reconnaissance of our solar system, with intense investigation of all the planets. Using orbital

spacecraft like the Hubble Space Telescope, NASA has also dramatically changed our understanding of the universe around us, as well as our own planet. NASA's early work on launch vehicles, communication satellites, and weather satellites has fundamentally changed daily life and created whole new industries. As a catalyst for international cooperation, NASA has also changed how and why humanity conducts space exploration. Now, NASA is preparing to take humankind farther than ever before, as it helps to foster a robust commercial space economy near Earth, and pioneers further human and robotic exploration as we venture into deep space.

https://www.nasa.gov/content/nasa-history-overview

Projects	Key elements	Date
Project		
Mercury		
Project		
Gemini		
Project Apollo		
Project Apollo		
Apollo 11		
Apollo 11		
Space Shuttle		
Space Shuttle		
Hubble Space		
Telescope		
The future with NASA		
WITH INASA		

4	How good is your memory? How many of these acronyms do you know?
Wha	at do they stand for?

-	N	Α	C	Α	
---	---	---	---	---	--

- NASA:

- ISS:

- USSR:

- HST:

(5) Add the correct prepositions. Get ready to read these dates aloud.

a) October 1, 1958

b) the 1960s

c)July 1981

d) the end of the 1960s e) the last 60 years

f) 19690s

g) March

h)Tuesday

i)12.45



6 Famous quotes! Who said the sentences below. Can you remember / deduce when they were said?

	"I believe that this nation should commit itself to achieving the goal, before this deco	ade is
	of landing a man on the Moon and returning him safely to Earth."	date
>	"That's one small step for [a] man, one giant leap for mankind"	date

CHECK 4	SIMPLE PAST – PRESENT PERFECT	
When NASA opened for business on October 1, 1958, it accelerated the work already started on human and robotic spaceflight.		
	ears NASA has continued to push the boundaries with cutting-edge	
<i>aeronautics research</i> → past action with a result, an impact on the present situation = present perfect		

- 7 Work on tenses. Circle the right tense and highlight the element which help you decide.
- 1/ NASA **began / has begun** to conduct space missions within months of its creation, and during its first twenty years NASA **conducted / has conducted** several major programs.
- 2/ Since its inception in 1958, NASA **accomplished / has accomplished** many great scientific and technological feats.
- 3/ Mars Global Surveyor was / has been the first spacecraft; it was / has been launched on November 7, 1996, and was / has been in a Martian orbit mapping Mars since 1998.
- 4/ In 1990, the Hubble Space Telescope was / has been launched into orbit around the Earth.
- 5/ NASA also **did / has** also **done** significant research on flight maneuverability on high speed aircraft that is often applicable to lower speed airplanes.
- 6/ Tragedy struck / has struck again on February 1, 2003.

8 Complete the words and learn them.

PAST SIMPLE /
PRESENT PERFECT
KC page 33

a breakthrough	resume (verb)	
an achievement	foster (verb)	
a boundary	venture (verb)	
widespread (adj.)		
cutting-edge (adj.)		

(9) Fill in with the past simpel or present perfect simple.

1.	(<i>have</i>) a problem with my computer yesterday.					
2.	We (already see) that movie, but I will go with you again if you					
	want me to.					
3.	We (be) in John's room when the storm (begin).					
4.	(not begin) my homework yet.					
5.	He (not sleep) for three nights, even though he early yesterday evening. (go) to bed					
6.	My uncle (never forget) my birthday.					
7.	They (<i>travel</i>) around the world last summer.					
8.	They (decide) this at a meeting a few days ago.					
9.	(You ever be) to Paris?					
10.	10. I know Manchester well. I (<i>live</i>) there for three years when I was a student.					
11.	11. Jim does not have much money so he (not buy) a car yet.					
12.	12. We (<i>have</i>) a good time at the party last weekend.					
13.	Look at that. Someone (<i>break</i>) my bike.					
14.	Emmi (<i>just finish</i>) packing her bags.					
15.	The plane (<i>land</i>) ten minutes ago.					
16.	(<i>do</i>) all the housework. Everything is clean now.					
17.	When (Columbus discover) the New World?					
18.	We (not visit) him since last weekend.					
19.	She feels great. She (<i>lose</i>) five pounds since Christmas.					
20.	The last time I (<i>play</i>) tennis was four years ago.					

10 Get more training! Select the simple past or the present perfect.

https://test-english.com/grammar-points/b1/past-simple-present-perfect/



(1) Complete the gaps with the correct words/phrases.

bound	certain	doubt	good chance	
likely	no chance	strong likelihood	unlikely	will
100% sure	replaced f you hav affect you	mputer equipment in the nearfuture. re personal problems, urwork. iis hard work, he's	it's	to
almost sure	voided.(nonth. There's a	Our sales are	to	rise next
don't think so	The lack of to goto co	begun toof evidence means tha	t the case is	

2 In pairs, discuss how likely the predictions below are. Use the language from the previous exercise.

- Privacy will become a thing of the past.
- By the early 2030s, we will be able to copy human consciousness to acomputer.
- Wireless Internet connection will be available anywhere on our planet.
- All forms of transport will eventually become electric.
- The effects of climate change will be irreversible.
- Physical money (coins and notes) won't exist anymore.
- Scientists will unlock the genetic secrets that could allow us to live forcenturies, maybe forever.

3 Before watching the video, match the underlined expressions with their meanings (1-6).

- a) If you <u>set your sights too low</u>, you will not be sufficiently challenged and mightfeel disappointed when you achieve your aim.
- b) We had to stop some flights to Spain over the winter season because theywere not commercially **viable** during that time.
- c) The man in the wheelchair insisted that he was <u>capable of</u> taking care ofhimself.
- d) The **boosters** will detach from the rocket at a certain altitude and then return to the launch pad.
- e) The biggest **thrill** is when your team wins a game against their worst rivals.
- f) The latest success of SpaceX may <u>spell</u> trouble for other spaceflightcompanies as they start falling behind.
- 1) device for increasing force or power
- 2) have goals which are not considered difficult to reach
- 3) a sudden feeling of excitement and pleasure
- 4) having the ability or quality necessary to do or achieve a specified thing
- 5) mean or have as a result
- 6) financially sustainable

4 Watch the video (to 3.50) and answer the questions below. https://youtu.be/I7LJIuB2CHE

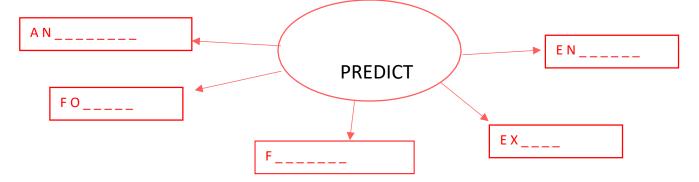
- a) How much more cargo than any other rocket can Falcon Heavy carry?
- b) What kind of Falcon Heavy features does Elon Musk name?
- c) What has been the biggest challenge to make Falcon Heavy fly?
- d) What is Elon Musk most excited about in terms of that rocket launch?
- e) Why is SpaceX a fantastic idea according to Bill Nye?

(5) One of the interviewees in the video said the following:

"There are two questions we've all asked: where did we come from and are we alone in the universe? And if you want to answer those two questions, you have to explore space."

- Do you believe that these questions can be answered through space exploration?
- Are these questions something that you've ever thought about?
- Does humankind really need answers to these questions?

(6) Complete the words to create synonyms for the word 'predict'.



(7) Use the words from (1) and (7) to create 5 predictions about the future of spaceexploration. Discuss in pairs or groups how likely you think these predictions are.

EXAMPLE: We predict that humans will have a permanent colony on Mars around 2030.

1)
2)
3)
4)
5)

SPACE SHUTTLE

1 So Listen and get information (Who? What? Where? When? Why?)



- 2 Watch the video and answer the following questions.
- 1/ What kind of document is this? Justify.
- 2/ What is it about?
- 3/ Who can you hear?
- 4/ What happened?

5/ Why?

12 CHALLENGER DISASTER : THE INVESTIGATION





The Rogers Commission, appointed by the USA President Ronald Reagan, was created to investigate the accident. You are one of the experts in charge of this investigation. Read the text below to find more about this tragedy.

→ MISSION:

What / where / who / when / how / what...for?

→ ACCIDENT:

When / what / who / why (technical details)?

→ CAUSES

What / who / why / when?

The launch took place on January 28, 1986. The sun had been up for less than an hour and air temperatures were a few notches above freezing when the crew of STS-51L boarded the orbiter Challenger that Tuesday morning. All around the country people were getting excited—in large part because the seven-person crew's included Payload Specialist Christa McAuliffe, a schoolteacher and mother of two chosen to fly as part of NASA's Teacher in Space program. As a civilian, she was PR catnip: infinitely relatable and proof that space was now truly open to average Americans. Kids nationwide would watch the launch live and know that no dream was beyond reach.

But 73 seconds after Challenger's launch, that dream quickly became a nightmare. Challenger disappeared as white vapor bloomed from the external tank. Spectators were stunned. Teachers scrambled to get their kids out to recess. And images of the grotesque, Y-shaped explosion dominated the news cycle for days to come. For the first time in its history, NASA had lost a crew on a mission—with the nation watching.

More than three decades later, the image of that explosion remains as iconic as Buzz Aldrin standing on the moon. Challenger not only taught America a lesson about faulty **Orings**¹ and **hubris**²; it forever changed our relationship with spaceflight and our tax-funded space agency. We're now in a new era where private companies, eyeing Mars, are starting to shift the spaceflight spotlight away from government efforts. Will these billionaire dreamers avoid the mistakes of the past? Whoever participates in the next space wave can learn a lot from Challenger's ill-fated flight.

Breaking Down the Accident

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In the months that followed the accident, a Presidential Commission led by former Secretary of State William P. Rogers—the so-called Rogers Commission—went through every piece of data to identify the disaster's **root cause**³. What they found was a very different launch than the one people had watched on TV. Pictures of the shuttle on the launch pad showed a puff of black smoke issuing from the bottom of the right solid rocket booster. Video of the shuttle's flight showed that the smoke disappeared, only to be replaced by a flame 66 seconds after launch. That flame grew alarmingly rapidly and was forced towards the big orange fuel tank by the slipstream as the shuttle rose ever higher. Data on the ground confirmed it was a leak in the booster, but no one could do anything about it. The solid rocket boosters couldn't be shut down, and there was no abort option while they were firing. That flame eventually burned through the shuttle's external tank, rupturing the liquid-hydrogen tank milliseconds before the right booster crashed into the liquid-oxygen tank. The two liquids mixed and exploded, destroying the orbiter with it. The source of the leak, as America soon learned, was traced to a tiny rubber part called an

O-ring, which formed the seal between sections of the solid rocket boosters. It was just one of many known "potentially catastrophic" elements of the space shuttle, sensitive to a number of factors—including extreme cold. If exposed to near-freezing temperatures, the O-ring lost its elasticity. Famed theoretical physicist Dr. Richard Feynman demonstrated what this meant at a press conference five months later. He twisted a small O-ring in a vice⁴, then dipped it in a glass of ice water. When he pulled it out, it kept its twisted shape, showing its lack of resilience to cold. In Challenger's case, the O-ring got so cold it hadn't expanded properly and allowed the leak.

This raised a more pressing question. The O-ring was known to be sensitive to cold and could only work properly above 53 degrees. Temperature on the launch pad that morning was 36 degrees. Why did NASA launch at all?

Faulty Decisions

To find an answer, the Rogers Commission interviewed engineers and decision-makers at both NASA and Morton Thiokol, the company that built the solid rocket boosters. What it found was a stunning lack of communication—almost as if officials had been playing a

game of broken telephone, with the result that incomplete and misleading information reached NASA's top echelons. And among that ill-translated information were concerns about the O-rings. The issue was completely absent from all the flight-readiness documents.

That wasn't the end of it. During a teleconference some 12 hours before launch, Thiokol engineers told NASA management about their concerns over the O-rings. Overnight temperatures were set to drop to 20 degrees, which raised an additional ice concerns. An early morning inspection confirmed that the launch structure was covered in foot-long icicles, and no one knew what would happen if they broke off and became sharp debris. The risks were deemed appropriate for launch.

The Commission ultimately flagged the root cause of the accident as "a serious **flaw**⁵ in the decision-making process leading up to the launch." Seven lives could have been saved if concerns about the O-rings had reached the right people, or if Thiokol had worried more about safety than satisfying its major customer. But this was only part of the accident's cause. There remained the question of why NASA didn't delay the launch.

The space shuttle was the realization of NASA's long-standing goal of reusability. Touted as the program that would truly open space for human exploration, it promised to turn spaceflight into something akin to air travel. Orbiters would be refurbished between missions to keep the overall program cost down and number of missions per year up. But five years after the inaugural launch, the program averaged just five missions a year as the agency was forced to acknowledge that four orbiters weren't enough for its original ambitious schedule. There were some notable parts of the program: NASA had diversified its astronaut corps with scientists, women and people of color, but this wasn't enough to sustain public interest. The missions were still esoteric and infrequent—which, coupled with NASA's insistence that spaceflight was routine, gave people little reason to care.

When the world perked up at the news that a teacher would be flying in space, what NASA needed more than anything was a win. The mission had already been delayed from mid-1985 to early 1986, and that Tuesday was the only real option NASA had to launch. There were technical considerations: the satellites and science **payloads**⁶ on board had to be deployed at certain times. The publicity goals, however, weighed heavier. According to the mission plan, Christa McAuliffe would broadcast a lesson live from orbit on her fourth day in space. A Tuesday launch meant a Friday broadcast, but a Wednesday launch meant a Saturday broadcast, when no students were in school. NASA needed the publicity of her broadcast.

Another factor was political. President Ronald Reagan was due to mention McAuliffe and the Teacher in Space in his State of the Union address on Tuesday night. If the launch was delayed, NASA would miss out on another big public mention. If the agency was going to justify continued spending on the program, Challenger had to launch on time.

There had never really been any thought of delaying the launch. NASA had leaned on its past successes as evidence that it was master over technology. But Challenger showed that technology can easily turn on its creator.

https://www.history.com/news/how-the-challenger-disaster-changed-nasa

1 O-ring = rubber ring-shaped seal used to prevent leaking

2 hubris = arrogance 3 root cause = origin

4 vice = clamp, device to hold things 5 flaw = defect

6 payload = cargo, goods

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CHALLENGER MISSION - GETTING READY

1 student.

You are **President Reagan**. You have just created the Teacher In Space Program (TISP). Give a speech to promote this program to astronauts, to the American nation.

(2) 🗪 4 students.

- You are 2 astronauts in charge of selecting the teacher who will be the first civilian in space. Imagine the questions you could ask the candidates. Get ready to play the interview.
- You are a candidate for the Teacher In Space Program. Get ready to be the best during the interview.
- You are **Christa McAuliffe**. You are being interviewed for the selection in the Teacher In Space Program. Get ready to be the best during the interview.

3 ≠ 4 students.

You are an astronaut about to embark on Challenger. The team is allowed 4 objects to take with them. Discuss what needs to be taken to space. Get ready to report to the group, explaining your choice.

4 ft 1 student.

You are **Christa McAuliffe**. You are about to enter Challenger, just before take-off. Give a speech to the American nation.

14 CHALLENGER DISASTER - A MOCK TRIAL

Mr. and Mrs. McAuliffe sue the NASA after Challenger tragedy. You are going to take part in this trial.





NASA vs Christa McAuliffe's parents

- Judge
- Mr. McAuliffe / Mrs. McAuliffe
- The NASA director
- Plaintiff's attorney
- Defense attorney
- Neil Armstrong
- An expert from the Rogers Commission
- Jurors (generally 12)
- Bailiff

CHECK 5

MOCK TRIAL PROCEDURE

Always address the judge by saying "Your Honor."

A/ Opening of Trial:

Bailiff: Please rise. The Court of the Second Ju	dicial Circuit, Criminal Division, is now				
in session, the Honorable presiding.					
Judge: Everyone but the jury may be seated. I	Ms./Mr				
(Bailiff's name), please swear in the jury.					
Bailiff: Please raise your right hand. Do you so	lemnly swear or affirm that you will truly				
listen to this case and render a true verdict ar	d a fair sentence as to this defendant?				
(Jury should answer "I do"). You may be seate	d.				
Judge: Mr./Ms.	_ (Bailiff's name), what is today's case?				
Bailiff: Your Honor, today's case is					
Judge: Is the prosecution ready?					
Prosecuting Attorneys: (stand up) Yes, your H	onor. (Be seated)				
Judge: Is the defense ready?					
Defense Attorneys: (stand up) Yes, your Hono	or. (Be seated).				

→ Opening Statement (Prosecution/ Plaintiff)

- 1. **Purpose**: To inform the jury of the nature and facts of the case.
- 2. **Include**: Name of the case. Your name. Client's name. Opponent's name. A description or story of the facts and circumstances that led to the case. A summary of the key facts each witness will bring out in testimony and the importance of any documents to be introduced.
- 3. Avoid: Too much detail. It may tire and confuse the jury. Exaggeration and overstatement. Don't use such phrases as "prove it to a mathematical certainty" or "prove it absolutely beyond question." Argument. It violates the function of the opening statement (which is to provide the facts of the case from your client's viewpoint). Anticipating what the defense attorney will say. Walking or pacing. It distracts juries and irritates judges.

Opening Statement (Defense)

- 1. **Purpose**: To deny that the prosecution / plaintiff has a valid case and, in a general way, to outline the facts from the standpoint of the defendant. Interruptions by prosecution or plaintiff are not permitted.
- 2. **Include**: Your name and your client's name. General theory of defense. Facts that tend to weaken the plaintiff's case. A rundown of what each defense witness will testify to. Conclusion.
- 3. **Avoid** Repetition of facts that are not in dispute. Exaggeration and argument. Strong points of the plaintiff's case. Walking or pacing. It distracts juries and irritates judges.

B/ Direct Examination of witnesses

→ <u>Direct Examination (Prosecution)</u>

Judge: Prosecution, you may call your first / second witness.

Prosecuting Attorney: Thank you, your Honor. I call to the stand
Judge: Will the witness please stand to be sworn in by the bailiff. (Witness stands)
Bailiff: (to the witness) Please raise your right hand. Do you swear to tell the truth, the
whole truth, and nothing but the truth?
Witness: I do.
1. Purpose: ■ To present the evidence necessary to warrant a verdict favorable to you

- 1. **Purpose:** To present the evidence necessary to warrant a verdict favorable to your client. All the elements of a law or criminal charge must be brought into evidence by witness testimony or documents. To present the facts with clarity and understanding; to convince the jury of the soundness of your client's case. To present your witnesses to the greatest advantage; to establish their credibility.
- 2. **Refreshing memory**: In the event that your witness's memory fails, you may refresh his or her memory by the use of the witness statement.
- 3. **General suggestions** Ask "open-ended" questions. Those usually begin with who, what, when, where, or how, or by asking the witness to "explain" or "describe." Avoid complex or long questions—questions should be clear and simple. Be a "friendly guide" for the witnesses as they tell their stories. Let the witnesses be the stars. Be prepared to gather information via questions and answers. Narratives, though very effective, may be open to objections.

→ Prosecution Questions Witness

→ Defense Cross Examines

- 1. **Purpose**: To secure admissions from opposing witnesses that will tend to prove your case. To negate your opponent's case by discrediting his/her witnesses.
- 2. **Scope**: Witnesses may be cross-examined regarding their direct testimony. Cross-examination is used to explain, modify, or discredit what a witness has previously stated.
- 3. **Approach**: Use narrow, leading questions that suggest an answer to the witness. Ask questions that require "yes" or "no" answers. Expose lack of sincerity or the existence of bias. Never ask "Why?" It gives a well-prepared witness a chance to explain. Generally, don't ask questions unless you know what kind of answer you are going to obtain. Be fair, courteous; avoid the "Isn't it a fact...?" type of questioning. Don't insist on an answer.

→ Direct Examination (Defense)

Judge: Defense, you may call your first / second witness.
Defense Attorney: Thank you, your Honor. I call to the stand
Judge: Will the witness please stand to be sworn in by the bailiff. (Witness stands)
Bailiff: (to the witness) Please raise your right hand. Do you swear to tell the truth, the
whole truth, and nothing but the truth?
Witness: I do.

1. **Purpose:** ■ To present the evidence necessary to warrant a verdict favorable to your client. All the elements of a law or criminal charge must be brought into evidence by witness testimony or documents. ■ To present the facts with clarity and understanding; to convince the jury of the soundness of your client's case. ■ To present your witnesses to the greatest advantage; to establish their credibility.

- 2. **Refreshing memory**: In the event that your witness's memory fails, you may refresh his or her memory by the use of the witness statement.
- 3. **General suggestions** Ask "open-ended" questions. Those usually begin with who, what, when, where, or how, or by asking the witness to "explain" or "describe." Avoid complex or long questions—questions should be clear and simple. Be a "friendly guide" for the witnesses as they tell their stories. Let the witnesses be the stars. Be prepared to gather information via questions and answers. Narratives, though very effective, may be open to objections.

→ Defense Questions Witness

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- 2. **Scope**: Witnesses may be cross-examined regarding their direct testimony. Cross-examination is used to explain, modify, or discredit what a witness has previously stated.
- 3. Approach: Use narrow, leading questions that suggest an answer to the witness. Ask questions that require "yes" or "no" answers. Expose lack of sincerity or the existence of bias. Never ask "Why?" It gives a well-prepared witness a chance to explain. Generally, don't ask questions unless you know what kind of answer you are going to obtain. Be fair, courteous; avoid the "Isn't it a fact...?" type of questioning. Don't insist on an answer.

C/ Closing argument

Judge: Both the prosecution and the defense have now rested their cases. The attorneys will now present their final arguments. Please remember, what the attorneys say is NOT evidence. However, do listen closely. They are intended to aid you in understanding the case. Prosecution, you may begin.

→ Prosecution Closing Argument

- Summarize the highlights of the testimony and documents as they support your case and undermine your opponent's case. Use actual examples from the trial that you have written down.
- Tie the facts to the law. Be persuasive. Confidently request the judge or jury to grant you the decision that you want.

→ Defense Closing Argument

- Summarize the highlights of the testimony and documents as they support your case and undermine your opponent's case. Use actual examples from the trial that you have written down.
- Tie the facts to the law. Be persuasive. Confidently request the judge or jury to grant you the decision that you want.

D/ Jury Deliberation

Judge: Members of the jury, you have heard all of the testimony concerning this case. It is now up to you to determine the facts. You and you alone, are the judges of the fact. Once you decide what facts the evidence proves, you must then apply the law as I give it to you to the facts as you find them.

The defendant is believed to be innocent of the charges. This presumption remains with the defendant throughout every stage of the trial and is not overcome unless you are convinced beyond a reasonable doubt that the defendant is guilty. The defendant is not required to prove his innocence.

The prosecution has the burden of proving the guilt of the defendant beyond a reasonable doubt. This burden remains on the prosecution through the trial. The prosecution must prove that a crime was committed and that the defendant is the person who committed the crime. However, the prosecution is not required to prove guilty beyond all possible doubt or to a certain percentage. Nor is the prosecution required to disprove every conceivable circumstance of innocence.

A reasonable doubt is a doubt founded upon reason. Proof beyond a reasonable doubt requires such proof that would convince you to rely upon a fact enough to make an important decision in your own business or personal affairs. However, if you are not satisfied of the defendant's guilt to that extent, then reasonable doubt exists and the defendant must be found not guilty.

In just a moment, the bailiff will take you to the jury room to consider your verdict. One of the first things you will want to do is to select a **foreperson** that will preside over your deliberations the way that a chairperson does at a meeting. It will be the foreperson's duty to sign the verdict form when you have agreed on a verdict. Whatever verdict you render must be **unanimous**. That is each and every person must agree on the same verdict. The Bailiff will now escort you to the deliberation room.

The jury considers the evidence and delivers a verdict.

(When the Jury Returns)

Judge: Have you reached a verdict?

Jury Foreperson: We have, your Honor.

Judge: What say you?

Jury Foreperson: (Read the verdict form)

Judge: Thank you, jury, for your work (continue with discussion from Judge's

Instructions).

The judge delivers a recommended sentence.

http://2ndcircuit.leoncountyfl.gov/teenCourt/resources/MockTrialJudgeandBailiffScript.pdf
Adapted with permission from the Mock Trial Manual of the Law, Youth & Citizenship
Program of the New York State Bar Association, www.nysba.org.



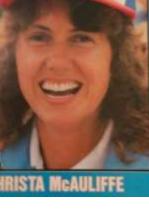
CHALLENGER DISASTER

8 students. You are a journalist. Read the expert reports (cf #12) and get all the information you need to write a press article about the tragedy. You are a journalist working for:

- ➤ Whizz Pop Bang
- > Time magazine
- People
- > NASA NEXT









CONNECTING YOUR IDEAS This brochure page 80



USING RELATIVE PRONOUNS KC page 62 This brochure page 9







TENSES This brochure page 82

DEBATING ON SPACE RESEARCH

'Space research is a priority.'

1 Read Check 9 Giving your opinion page 81 and write down 2 expressions in each box.

Give your opinion	Give yourself time to think
Agree	Disagree
	_

2 Prepare your arguments.

Pros	Cons

3 Debate in groups of 4.

NASA'S 60th TO-DO LIST (2018)

1 WATCH the video and take notes. Complete NASA's to-do list.

https://solarsystem.nasa.gov/news/280/nasas-2018-to-do-list/



#	TO-DO LIST	PROJECT / DEVICE
1	Send a robot to	
2	Launch with American companies from soil	
3	Visit an as old as our Solar System	
4	Search for around distant stars	
5	Embark on a journey to the / Fly closer than ever before	
6	Prepare to send to the and beyond, and bring them back home	
7	Prepare to launch the next great	
8	and in space for the 18 th consecutive year	
9	Partner with companies on deep space	
10	our dynamic	
11	Track the Earth's from space	
12	Use space to measure on Earth	
13	Use space to map	
14	Fly an efficient and eco-friendly airplane	
15	Partner with industry to make booms	
16	Fire thrusters with propellant	
17	Improve space	
18	Find new ways to harness the's energy	

2 SGroup work

You are members of a committee of experts and engineers commissioned by NASA's administrator Jim BRIDENSTINE. He has asked you to **choose 3 top priority missions** among the 18 above.

- ✓ Discuss their feasibility
- ✓ Explain the reasons why some projects will not be selected
- ✓ Prepare your arguments in favor of the 3 projects you will select. Explain their relevance and the positive effects they entail for science and life improvements on Earth.

(3) Present your conclusions to the group.

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AT 20, THE ISS REMAINS A STELLAR SUCCESS STORY

What began as an unprecedented construction challenge has gone on to produce unparalleled science from space.

by Eric Mack - November 19, 2018 https://www.cnet.com/news/

Twenty years ago, the most ambitious construction project in the history of the human race began with the launch of a Russian Proton rocket on Nov. 20, 1998. The uncrewed vehicle carried Zarya, a control module that would become the first piece of the International Space Station placed in orbit.

The first crew, consisting of American astronaut and former Navy SEAL Bill Shepherd alongside Russian cosmonauts Sergei Krikalev and Yuri Gidzenko, would arrive to live in orbit just under two years later on Oct. 30, 2000.

Construction of the ISS, however, would continue for another decade until 2011, when the final planned module was installed. All that assembly was done over **a decade** while the station was continuously **inhabited** by rotating crews of astronauts from several different countries.

NASA

"The space station to me and the way we have put that program together with our international partners is absolutely the best example of how we can peacefully, successfully do complicated things," retired NASA astronaut Nicole Stott told me via a teleconference earlier this year.

Stott spent three months living on the space station in 2009 and was also part of the final space shuttle mission in 2011 that delivered the last main section of the ISS, essentially completing its construction.

25 A crazy construction project

"The International Space Station's supreme **achievement** is its construction," writes David Nixon, an architect who was invited to work on the design of the ISS, in his 2016 book International Space Station: Architecture Beyond Earth.

He points out the unprecedented **hurdles** involved, beginning with launching every module, nut, bolt and piece of framing required aboard a powerful rocket to a **remote**, empty and **lethal** location.

"Performing just one of these voyages safely was a major challenge but the station's design called for 30 of them just to deliver the station's basic building blocks. **Against the odds**, all arrived on orbit safely and **flawlessly** where they fitted together correctly and precisely."

Today the ISS is a six-bedroom research station with two bathrooms, a gym and a cupola providing epic 360-degree views. The station and its crew of up to six live and work while orbiting Earth every 90 minutes, traveling at a speed of 5 miles per second. It's powered by an acre of solar panels that help make the station relatively easy to spot from Earth.

When asked about the strangest part of living aboard a structure straight out of science fiction whipping around the planet at high speed, Stott said, "It really is that almost immediate reality check that we live on a planet ... In our day-to-day lives I don't think we acknowledge that at all."

Fulfilling a far-fetched fantasy

One of the earliest conceptions of a station in space was a "brick moon" described by Edward Everett Hale in his 1870 story of the same name. It describes a brick sphere, 200 feet (61 meters)

in diameter, that's launched, somehow, using power from a waterfall and with people accidentally inside, making it one of the first references to an inhabited station in space.

By the middle of the 20th century, Soviet and American engineers were beginning to think more seriously about a place to live in space. The success of the Apollo program led to the launch of Skylab, which would be occupied by three crews for a total of 171 days between 1973 and 1974, paving the way for more permanent facilities in orbit.

This was followed by the Apollo-Soyuz test in 1975 that demonstrated spacecraft from the two nations, previously engaged in a heated space race, could successfully dock in space. The mission was a symbol of international cooperation and a **harbinger** of things to come, starting with the Russian space station Mir, built between 1986 and 1996.

A number of American astronauts would spend time aboard Mir, including some making the trip aboard the space shuttle.

Humans would leave Mir for the last time in 2000, just months before the first crew of the ISS would arrive to begin over 18 years of nonstop occupation that continues to this day.

One-of-a-kind laboratory

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Over nearly two decades, the ISS has played a unique role in the scientific world as both an orbiting laboratory and Earth observatory. Much of the science and innovation done on the space station have had benefits for regular people on the surface of the globe.

For example, robotics developed for the ISS are being used for remotely operated surgical procedures, including for breast biopsies for women in remote areas.

Technology designed to test water quality aboard the station has also led to a mobile app to keep track of water quality in locations worldwide. Imagery taken from the ISS and elsewhere in orbit is also used to assist in natural disaster recovery.

One of the best-known long-term experiments aboard the space station was the year-long investigation into the effects of living in space involving twin astronauts Mark and Scott Kelly. Scott lived for about a year on the ISS while his twin brother Mark stayed on the surface. Changes to both brothers were tracked meticulously to record how life in space affects the human body.

Life aboard the space station might sound a little uncomfortable with the lack of gravity, close quarters and required two hours of exercise per day, but Stott describes it as "the most comfortable I've ever been."

"I really wish everyone could experience it, just the ability to fly and float from one place to another and do what I only ever dreamed of."

The number of people who will be able to experience life on the ISS could be limited, however. The Trump administration has said it wants to cut off funding for the station by 2025. It's also been suggested that private industry might take over all or part of the operation of the ISS at that point. NASA has made it clear it wants to continue having a presence in orbit and it also has designs on setting up shop at the moon, a plan that former ISS resident Chris Hadfield told me he approves of.

"Over 18 years ago we started settling space," says the astronaut who became famous for his microgravity rendition of the song Space Oddity. "The moon is the obvious, next logical destination."

(1) Complete the ISS identity card.

First piece	Name:
of the ISS	Date:
	Names: -
First	-
astronauts	-
	Date:

Final step of the	Date:	
construction		
Facilities in the station		
Hosting capacity		
Time to orbit the Earth		
Speed		
Powered by		
ISS's ancestors	The "brick moon": Skylab: MIR:	THE BRICK MOON AND OTHER STORIES E-WARD EVERATT HALE
Benefits of the ISS	- - -	
Future of the ISS		

2 Work on words. Find in the text the English words for:

- **③** Work on words. Focus on the context and give the possible meaning for the words in bold letters
- He points out the unprecedented **hurdles** involved. (l. 28)
- Against the odds, all arrived on orbit safely and flawlessly where they fitted together correctly and precisely. (I. 31)

Γhe m 52)	he mission was a symbol of international cooperation and a harbinger of things to come. (I. 2)					
4 w	ork on words. Reform	nulate these sentences with compound adjectives.				
Γhis is	an experiment which	n everyone knows and which lasts on the long term.	HE			
= this	is a	experiment.	COMPO ADJEC KC pag			
Γhe in	vestigation <u>lasted a ye</u>	ear = this was ainvestigation				
	CHECK 6	PASSIVE VOICE				
1116	e crew built the iss. 7	The ISS was built by the crew.				
		+				
8	Rewrite these sentence	es. Instead of using somebody or they etc., write a passive sent	ence.			
©	1 Somebody has cleaned	ed the room.				
	The room has bee					
	2 Somebody is using th	ne computer right now.				
	The computer	omebody was recording our conversation.				
	I didn't realise that	sincoody man reconoming our control				
	4 When we got to the s	stadium, we found that they had cancelled the game.				
		stadium, we found that				
	5 They are building a ne	new ring road round the city.				
	6 They have built a nev	w hospital near the airport.				
(Make sentences from the	he words in brackets. Sometimes the verb is active, sometimes p	assive.			
9	1 There's somebody be	thind us. (I think / we / follow) I think we're being followed.				
	2 This room looks differ	rent. (you / paint / the walls?) Have you painted the walls?				
	3 My car has disappeare	ed. (it / steal!) It				
	4 My umbrella has disa	appeared. (somebody / take) Somebody				
		lary now. (he / promote) He				
		ice this week. (it / redecorate) It				
		with the photocopier yesterday, but now it's OK.				
	(it / work) It	again. (it / repair) It				
		e room, I saw that the table and chairs were not in the same place.				
	(the furniture / move 9 A neighbour of mine	disappeared six months ago. (he / not / see / since then)				
	He					
	10 I wonder how Jane is	these days. (I / not / see / for ages)				

11 A friend of mine was mugged on his way home a few nights ago. (you / ever / mug?)

PREPARE YOUR WRITING

1 Write these words in English.

futur	importante	environnement	gouvernement	développement
un scientifique	un informaticien	système	un être humain	des humains
l'informatique	intéressant	un ingénieur		

2 Write the plural form of these words. Write Ø if there is no plural form.

software	information	progress	research	weather	
discovery	infinity	country	technology	industry	
foot	man	life	analysis	basis	
aircraft	spacecraft	sheep			

3 Choose the correct proposition to make these sentences right.

- 1) The USA is / are interested in / by science.
- 2) Each country / countries is / are involved.
- 3) They put their / theirs feet / feets on Ø / the Moon.
- 4) They discovered **Ø / the** space. It is good for **Ø / the** environment.

 They walked on **Ø / the** Moon but they didn't walk on **Ø /** the Mars.
- 5) This gave engineers much / many information / informations.
- 6) Ø / the Space gives Ø / the / a / an infinity of opportunities.
- 7) Space exploration is important **to / for** improve science.
- 8) They improve science with / by discovering new elements.
- 9) If people could live on the Moon that will / would change.
- 10) This / these ideas are innovative / innovatives.
- 11) The shuttle didn't leave / left the launching pad.

- 12) It could help / helps / helped humanity.
- 13) The first steps has / have been shown on TV.
- 14) Ø / the virtual reality is amazing.
- 15) Ø / the VR which Google implemented is amazing.
- 16) This long journey started on / the / in 19th July 1969.
- 17) Neil Armstrong is $\mathbf{a} / \mathbf{\emptyset} / \mathbf{the}$ first man to step in $/ \mathbf{on} / \mathbf{to}$ the Moon.
- 18) Ø / the Neil Armstrong's statement is great.
- 19) This / these research is / are important.
- 20) This statement we shows that / shows us that...
- 21) The victim's families / victims' families / victims's families are so sad.
- 22) They / there are more and more people working on space research.
- 23) It is important to go on / to the Moon.
- 24) It is important to / for discover new things.
- 25) The other / others planets are very far.
- 26) Please save Ø / the earth of / from pollution.
- 27) Armstrong is one of the biggest astronaut / astronauts.
- 28) This means **giant / giants** steps for **Ø / the** mankind.
- 29) The most important accident happened **Ø / the** last century.
- 30) What are you doing for the astronauts's family / astronaut's family / astronauts' families / astronauts' family?
- 31) With **Ø / the** VR, **all / everything** is fiction.
- 32) American / Americans astronauts are very famous.
- 33) A lot of technology was invented in **much / many** new **different / differents** sectors.
- 34) All this / these people was / were thinking space exploration was / were easy.
- 35) It is true that / than it can be an adventure very useful / a very useful adventure.
- 4 Translate into English.
- 1) Tout le monde a été encouragé à faire plus pour aller sur la lune.
- 2) Ces informations sont essentielles pour la recherche spatiale.
- 3) De nombreux chercheurs sacrifient leur vie pour la science, pour vivre sur Mars.

⑤ Discuss the following quote by astronaut Chris Hadfield "*The moon is the obvious, next logical destination*." (text page 45, l. 87).

Illustrate your ideas with examples taken from the text or personal examples and give your point of view.

Pros	Cons

6 By pairs: Write a 250-word essay.	"The moon is the obvious, next logical destination."
Introduction:	
Part 1:	
Idea # 1:	

Example # 1:
Idea # 2:
Example # 2:
Part 2:
Idea # 1:
Example #1 :
Idea # 2:
Example # 2:
Conclusion:





TENSES
This brochure page 82

THE FUTURE OF AEROSPACE

1 So Listen and take notes.

https://youtu.be/MDvH8IWcU4g



2 常 IN PAIRS, share your notes.

Say what you think you have understood. List all the futuristic and far-fetched visions of travels out of space. Discuss them. How plausible are they to you?

- (3) Answer the following questions.
- A. What about the real future of aerospace in terms of "commercial space travel"?
- B. What about the future in the next five or six years? What improvements will be achieved?
- C. What does the future of aerospace depend on? (2 things)
- D. Give examples of big and small changes.

E. What is the future of airlines and aircraft all about in the commercial world?

F. Why would the price of our ticket go down a little?

- G. Instead of pushing the limits beyond what we thought was capable, what is aerospace going to do?
- **④** / **GET READY TO REPORT.** Use your notes and your answers to sum up the video, writing a short text or giving an oral recap.

Don't forget!

Hybrid planes that use **both** electric and traditional fuel sources. We've experienced a turn toward sustainable energy on the ground, **either** in our cars **or** in our homes.



page 12

21 RECORD A PODCAST

1 or 2 students.

Record a 3-minute podcast for the 65th anniversary of the creation of the NASA. Make your podcast lively.

Use a jingle. Invite a guest. Answer questions from the audience. Ask them to like and share your audio! Drop your podcast on eCampus.



Space exploration

① Watch the video in English (NO SUBTITLES) without taking any notes. https://www.youtube.com/watch?v=mQOOgDqUta0&feature=youtu.be
② Explain the word 'sustainable':
③ What is PurdueU? Where is it? What is it renown for?
When was David Smith Senior at Purdue?
What is he studying now at Purdue?
4 Watch again and answer the following questions:
A/ What was David Smith's design project during his Senior year?
B/ Michael Griffin paid a visit to Smith's class during their senior year. Who was he?
What did he say about space exploration?
C/ Use what you know or get elements from the Net to give some information about: - Space X
- Virgin Galactic:
D/ Complete the subtitle of Smith's talk: "Put a
What is the idea beyond that subtitle?

E/ Why was the Apollo program successful according to David Smith?
F/ Why was the satellite program successful according to him?
G/ What are the keys to sustainable space industry?
H/ Is space tourism one of these keys? Why?
I/ Which areas have problems which could be solved in space?
J/ Which raw materials and resources, rare on Earth, could be found in space? Recap with Smith's most important sentence: We need to make
Explain what it means with your own words. 4 Ask you teacher for the worksheet on which you are going to write your essay.

The rise of Space X

① Watch the video and take notes.

https://youtu.be/a_T4QayqtI4



② Prepare a 15-line press article about the rise of Space X. Hand it in to your teacher.

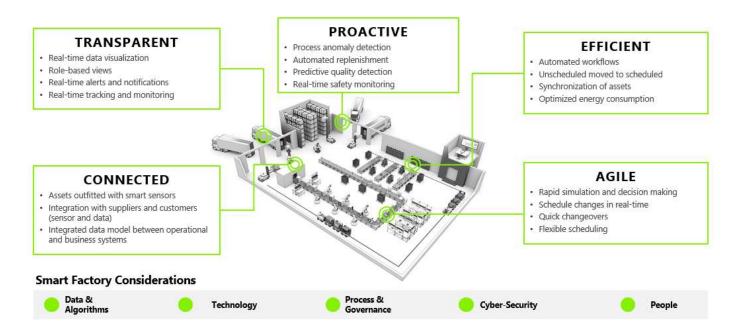


POST COVID-19 AEROSPACE INDUSTRY: AN OPPORTUNITY TO EMBRACE THE 4.0 ERA?

Benefits of Smart Factory technologies across aircraft manufacturers operations.

Smart Factory technologies play on five major levers:

- Connectivity, as assets outfitted with smart-sensors throughout the whole value chain can now be integrated to business information systems
- Transparency, bringing real-time data visualization about processes and operations
- Proactivity, allowing predictive maintenance or process anomaly detection
- Efficiency, with strongly increased automation capabilities
- Agility, as simulation capabilities are expected to improve dynamic decision making



The better integration of these technologies within aircraft manufacturers can lead to improved performance across **four major performance aspects**:

Group work:

- → Each student reads their part of the text.
- → All students from the same group recap what they have understood.
- → Make groups of 4 students (1 to 4). Share the findings. Write a short paragraph to recap the article.

Student 1:

Asset capacity-utilization improvement (10-20%): Sensor-equipped assets and processes (IoT) enable aircraft manufacturers to track a wide set of KPIs in real time with three key benefits: reduction of process variability, improvement of throughput performance and yield and dynamic planning capabilities enablement to optimize even further capacity utilization.

- First, automation and advanced robotics reduce fluctuations in asset performance: machines are
 programmed with defined work standards and potential unexpected status changes or sub-par
 performance are immediately reported for action, hence decreasing process variability. Going a step
 further, machine learning and cognitive technologies are used for self-adjustment on simple
 variances, therefore limiting human intervention to the most critical situations.
- Second, digitalization offers an end-to-end near-real-time overview of production operations rather than a siloed approach with views on only one unit at a time. As KPIs specific to each job sequence are gathered and channeled up to command centers, bottlenecks or deadlocks lengthening lead times (e.g., missing tools or parts) will be quickly identified for prompt action, therefore increasing production throughput and yield.
- Third, Smart Factory capabilities bring aircraft producers more process flexibility, such as reduced changeover times and modular automated workflows: dynamic planning practices allow production schedules and process simulation, in order to better adapt to demand fluctuations (e.g., changes in aircraft model, customization). In that respect, Deloitte launched a cloud-based application called "Smart Factory Fabric" for which Spirit AeroSystems in September 2019, a large aero-structures manufacturer, has been an early adopter: the app documents and tracks every part of the 767 forward fuselage assembly process, enabling dynamic production schedules based on advanced algorithms and automated material movement.

Student 2:

Product quality improvement and quality controls optimization (10-35%): Smart technologies enable automated in-line quality inspection, reducing the need for reworks – or increasing its efficiency - and facilitating the construction of feedback loops.

- In-line quality controls are performed thanks to scanning technologies and sensors along the production chain for early detection of process anomaly and aircraft defects. Contrary to tradition quality checks taking the product out of the line for inspection, smart quality insurance can be carried out "on the go" without interrupting production, therefore reducing scrap rates. The most advanced quality controls entail automatic correction based on Artificial Intelligence and machine learning. For example, Spirit AeroSystems developed a system comparing an ideal image of a complex assembly to units produced, with the Lynx™ Visual Inspection System, to identify missing parts or parts installed incorrectly.
- **Necessary rework** is facilitated by robotics and guided by sensor data, thus much more relevant and accurate, therefore increasing overall yields and efficiency.
- Upon the final quality assurance step, Smart Factory tools facilitate **fully automated feedback loops** on faced issues (both solved and unsolved) on products, as failures are communicated in real-time to the command center concomitantly with process parameters for in depth and quantitatively substantiated root cause analysis. This supports continuous improvement for lean execution.

Reduced operations and maintenance costs (20-30%):

- Automation and digitalization bring a great opportunity for aircraft manufacturers to review their
 organizational approach with three key benefits: shorter lead-time, optimal resource allocation
 and team effectiveness.
 - As job sequences are mostly programmed and simplified, with little human intervention, production and supply chain **lead-times are highly reduced**. For example, thanks to 3D printing deployment for jet engine fuel nozzles manufacturing, GE divided the number of parts requiring assembly operations by twenty, hence shortening lead-time by ten times.
 - Furthermore, **optimal resource allocation and planning** allowed by dynamic production schedules help reducing idle time and waste, refocusing resources on high-value-added tasks. Indeed, Smart Factory technologies allow **virtuous circles in terms of human capital** management: while the need for unskilled operators decreases, there is an opportunity for skills and capabilities building. For

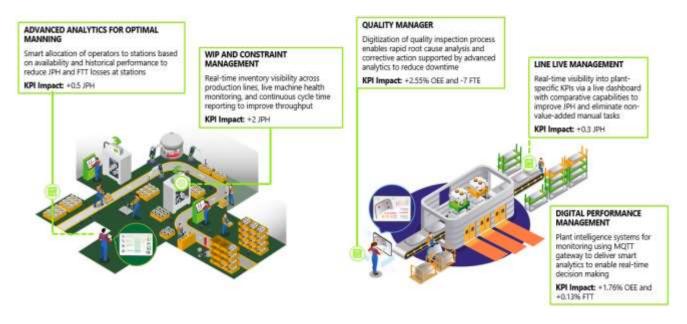
instance, in command centers, teams should be upskilled to make informed decisions based on advanced analytics.

• Finally, a wide range of digital resources is available to **improve team effectiveness on the ground,** such as work orders with customized or augmented-reality instructions, tailored troubleshooting guides and checklists. Many operational issues can be solved quicker and at a lower cost, instead of resorting to remote-resolution call centers. For example, Dassault Aviation implemented Diota's Digital-Assisted Operations solution: operators visualize directly right in front of them pinning instructions on the sail. They only need to put the pins following the references and localizations indicated.

Student 3:

Reduced operations and maintenance costs (20-30%):

- Command centers provide an integrated view on operations to avoid disruption risks and optimize
 costs (incl. logistic costs and working capital requirements), through near real time performance
 monitoring, advanced analytics to drive operational excellence and risk-based decision-making.
- Aggregated metrics, channeled upwards from asset sensors, are tracked to bring full transparency on end-to-end operational performance at a granular level in near real time. Responsiveness is critical in case of bottlenecks or deadlocks and a quick mitigation limits downtime costs.
- Command centers are also at the hearth of **failure root-cause-analysis**, powered by algorithms, process simulation and correlation modelling. For example, in its Saint Eloi factory near Toulouse, Airbus developed visualization tools based of the digital twin of the entire assembly line to make more accurate process simulations.
- Finally, command centers and deploying **risk-based asset management**, i.e. making decisions based on asset criticality to production, for which condition or status change can be quickly identified through connected sensors.



- Increased safety and sustainability (3-10%):
- In terms of safety, digital capabilities can facilitate analytics and reduce safety hazards for workers: Root cause analyses on risky staff behaviors are performed in the command centers, with outcomes rapidly cascaded to teams, to increase awareness on best practices, reduce potential injuries and foster employees' wellness at work. Furthermore, robots are highly

relevant in multiple safety use cases, such as dealing with tasks either dangerous or physically demanding for human workers.

 On the sustainability side, advanced statistical process control can foster energy efficiency and help cutting GHG emissions. According to Airbus's estimates, energy consumption in aircraft production could be reduced by 20%, as algorithms propose energy-saving measures, based on smart meters' usage data. Besides, robotics can make product dismantling and recycling of easier.

Student 4:

Conclusion

Although responsiveness, productivity and agility benefits for aircraft manufacturers are undisputed, 4.0 technology investments will be an extra financial stretch in an industry already under pressure. Therefore, the two following considerations can help decision-making on investment assessment and execution:

- Groundbreaking transformation does not seem realistic due to tight resources, especially for
 players asking for governmental bailout. Investment proposals should then be backed by strong
 business cases, and their consistency with existing initiatives well documented, as add-ons could
 be preferred over disruptions to strengthen feasibility. Investment proposals should bring shortterm benefits to aircraft manufacturers to address current challenges such as reduced teams onsite, e.g., increased asset connectivity and remote-control options, IoT-enabled inventory
 management.
- From the execution point of view, however, we can be optimistic, as aircraft manufacturers have already demonstrated strong discipline capabilities.

Therefore, investments in Smart Factory capabilities are to be look through a long-term lens, as they essential to support a recovery on sustainable pillars and build competitiveness in the long-run. Many companies may wrongly favor speed over sustainability for the ramp-up of their Smart Factory initiatives, hence operating their businesses on pre-crisis patterns, without considering upcoming climate requirements. Conversely, building up on digitalization during the slowdown will enable a leaner and greener bounce back.

- Prior to Covid-19, this year was meant to be a milestone on the sustainability agenda, as IATA's target set a cap on net aviation CO2 emissions from 2020, to encourage carbon-neutral growth in air transport. Longer term, the reduction target by 2050 amounts to 50% vs. 2009 CO2 net emission levels. Once the dust caused by the outbreak settles, these environmental objectives will come back to the fore. In this respect, investments in Smart Factory capabilities will serve as sustainable pillars for operations improvement and target compliance.
- Smart Factory capabilities should be deployed across the whole value chain, not only the large aircraft manufacturers and Tier 1 suppliers, to enable sustainable competitiveness, avoiding future bottlenecks coming from lower tier or small suppliers not having fully embraced then 4.0 transformation. Thus, at the end of 2019, GIFAS (French aerospace industry association) launched a three-year program with a €23m budget for 300 medium-sized companies to embrace the Future of the Industry, with the implementation of 4.0 technologies. For example, two significant ongoing pilots at Mecaprotec Industries, specialized in surface treatments against corrosion and deterioration, and Gillis Aerospace, an aerospace fasteners manufacturer, respectively focus on trimming automation and robotics improvement for parts loading and unloading. French government support initiatives to the aerospace industry will also have to address the need of lower-tier suppliers to improve their competitiveness through 4.0 investments.

PART 3 TOEIC LISTENING PART

PRESENTATION DU TEST

Le test commence par la partie **LISTENING** (100 questions - 45 minutes – 495 points). Une seule écoute. Les questions doievent se faire dans l'ordre.

Suit ensuite la partie **READING** (100 questions - 75 minutes – 495 points). Vous organisez votre temps comme vous le souhaitez pour faire les parties 5 à 7.

		TOEIC
	Part 1	- 6 pictures
	Q1 to 6	- oral questions not written in the textbook
		- choice of 4 statements (not printed) to describe the picture
	Part 2	- 25 short conversations (1 question or statement - not printed
LISTENING	Q7 to Q31	- with 3 answer choices -not printed)
PART	Part 3	- 13 dialogues (2 or more speakers) = 39 questions
100 questions	Q32 to Q70	- 3 printed questions on each conversation with 4 answer
45 minutes		choices (also printed)
	Part 4	- 10 talks (single speaker)
	Q71 to Q100	- 3 printed questions on each talk with 4 answer choices (also
		printed)
	Part 5	- 1 word or phrase is missing in each sentence
	Q101 to 130	- 4 answer choices
READING	Part 6	- 4 texts
PART	Q131 to 146	- 4 parts where a word, phrase or sentence is missing
100 questions		- 4 answer choices
75 minutes	Part 7	- Selection of 1 or more texts (magazine&newspaper articles,
	Q147 to 200	emails, instant messages, ads,)
		- 2 or more questions
		- 4 answer choices

CONSIGNES

Les consignes sont très strictes. Vous devez écrire au crayon de papier. Seuls un crayon de papier, une gomme et votre pièce d'identité sont autorisés sur la table. Pas de trousse, pas de bouteille d'eau. Si vous avez une montre ou un pull, vous devez les porter sur vous.

Vous ne pouvez pas écrire sur le livret. Vos réponses sont à noter sur une grille en noircissant une des 4 cases pour chaque question. Attention à l'ordre des questions. En cas d'erreur, vous devez gommer et ne pas utiliser de correcteur. Il ne faut écrire qu'une réponse par question. Une fausse réponse n'entraine pas de pénalité donc n'hésitez pas à répondre au hasard aux questions pas encore traitées en fin de test.

LISTENING SECTION
1 A B C D 26 A B C D 51 A B C D 76 A B C D
2 A B C D 27 A B C D 52 A B C D 77 A B C D

READING SECTION
101 A B C D 126 A B C D 151 A B C D 176 A B C D
102 A B C D 127 A B C D 152 A B C D 177 A B C D

LISTENING	PART 1
PHOTO	GRAPHIES

TIPS:

- → Etudiez tout de suite les photos avant d'entendre l'audio. Repérez les lieux, personnages, objets, actions, positions.
- → Méfiez-vous des éléments attrayants
- → Procédez par élimination en cas de doutes
- → La bonne réponse peut porter sur un élément secondaire

1. LES ACTIONS

→ Elles peuvent être exprimées par des **verbes**, souvent au présent en *be+ing*. She's cleaning the table.

Vocabulaire		Verbes d'a	ction
cleaning	nettoyer	tying	nouer, attacher
putting on	mettre, enfiler	posting	poster
hanging	suspendre, accrocher	wrapping	emballer (cadeau)
folding	plier	sweeping	balayer
putting away	ranger	cooking	cuisiner
picking up	ramasser	carrying	porter

→ Les actions peuvent être exprimées par des **prépositions de mouvement.** She's walking out of the shop.

Gramm	aire	Prépo	Prépositions Préposition Prépositio	
Prépositions	Indication		Exemples	
on	montée	get on (the plane)	monter dans	
off	sortie, retrait	get off (the bus) wipe off (the dirt)	descendre enlever	
up	vers le haut	run up (the stairs)	monter en courant	
down	vers le bas	walk down (the street)	descendre à pied	
away	éloignement	put away walk away	ranger s'éloigner	
to	direction	go to	aller vers, à	
at	direction	shout at (someone) throw (something) at	crier sur jeter sur / vers	
along	le long de	run along (the river)	courir le long de	
beside, next to	à côté de	sit beside (someone)	être assis à côté de	
into	entrée, vers l'intérieur	walk into (the room)	entrer dans	
out of, from	sortie, vers l'extérieur	walk out (of the office) remove from (the shelf)	sortir de retirer de	
across, through	traversée	swim across (the lake) walk through (the door)	traverser à la nage franchir	
past	dépassement d'un point fixe	go past (the school)	passer devant	

2. LES MOUVEMENTS DU CORPS

Vocabulaire		Les mouvements du corps	
kneeling	être à genoux	pointing	pointer du doigt
shaking hands	serrer la main	hitting	taper
running	courir	balancing	être en équilibre
waving	faire un signe de la main	bending	se pencher
leaning	se pencher, s'appuyer	reaching for	tendre la main vers / pour
raising a hand	lever la main	grabbing	attraper
kicking	donner des coups de pied	climbing	grimper
standing	être debout	crouching	être accroupi
clapping (hands)	applaudir	getting into / out of	entrer / sortir de
stretching	allonger, étirer, étendre	sitting	être assis / s'asseoir

Choisissez la proposition qui décrit le mieux la photo.



- 1
- A She is reaching for her phone.
- She is turning off the TV.
- C She is stretching her legs.
- D She is lying in bed.



- 4
- A He is stretching out his arm.
- B He is skiing down the mountain.
- (C) He is lying in the snow.
- (D) He is walking in the valley.

3. LA POSITION

→ Les prépositions peuvent indiquer la place d'une personne ou d'un objet. En regardant l'image, repérez les personnes/ objets et pensez aux prépositions possibles.

She's standing next to / behind / in front of the whiteboard.

Grammaire		Les prépositions de lieu		
in	dans	between	entre	
on	sur	under	sous	
at	à	below	sous, en-dessous	
around	autour	above	au-dessus	
near	près de	over	au-dessus, par-dessus	
next to	à côté de	opposite	en face de	
by	à, à côté de	across	en face	
in front of	devant	inside	dedans, à l'intérieur	
behind	derrière	outside	dehors, à l'extérieur	

Complétez la description de chaque photo avec une préposition de la liste. Deux prépositions sont en trop. on – next to – around – between – in front of – opposite – into – behind



1 The whiteboard is the people.



2 The cup is the laptop and the plant.



3 The laptop is the women



4 The phone is _____ the computer screen,



5 The people are working a table.



6 The pen is the paper,

Vocabulaire	La position		
piled (up)	empilé	placed on	placé sur
stacked (up)	empilé	gathered	rassemblé
scattered	éparpillé	lying on	posé sur
lined up	aligné	set on top of	placé au-dessus de
hung	accroché sur / à	surrounded by	entouré de
laid out	disposé	leaning against	posé contre

Complétez la description de chaque photo avec un mot du vocabulaire ci-dessus; il peut y avoir plusieurs réponses.



The documents areup around the woman.



The papers are on the table.



3 The clothes are on rails.



4 The boxes are



5 The tools are on the wall.



6 The papers areon the table.

4. L'environnement de travail

Vocabulair	re e	Les fournitures de bureau		
office	bureau (pièce)	headphones	casque audio	
desk	bureau (meuble)	clock	horloge	
drawer	tiroir	lamp	lampe	
chair	chaise	photocopier	photocopieuse	
shelves	étagères	tray	plateau	
filing cabinet	classeur de rangement (meuble)	binder	classeur	
laptop	ordinateur portable	notepad	bloc notes	
monitor	moniteur	tape	ruban adhésif	
screen	écran	magnet	aimant	
keyboard	clavier	folder	dossier	
mouse	souris	pictures	images, photos	

Vocabulaire		Au restaurant		
patron	client	cuttery	les couverts (fourchettes, cuillers, couteaux)	
diner	dineur, convive	glass	verre	
server, waiter/waitress	serveur/-euse	paper napkin	serviette en papier	
apron	tablier	freezer	congélateur	
plate	assiette	food	nourriture	
bowl	bol	beverage	boisson	
tray	plateau	cutting board	planche à découper	
tablecloth	nappe	cookware	ustensiles de cuisine	
place setting	couvert	counter	comptoir	

Trouvez les mots qui correspondent aux chiffres sur la photo à l'aide du Vocabulaire Express ci-dessus.

1	
2	
3	
4	
5	
6	
7	
8	
9	
n	



Dans chaque phrase, repérez les mots qui ne décrivent pas correctement la photo de l'exercice :

- 1 The chef is serving the food.
- 2 The condiments are at the edge of the table.
- 3 The waitress is holding a black apron.
- 4 Some people are eating dessert.
- 5 The server is pouring someone a beverage.
- 6 The tray is empty.

LISTENING	PART 2	
QUESTIONS - ANSWERS		

TIPS:

- → Rien n'est écrit dans le livret! Restez très concentré!
- → Le premier mot de la question indique souvent l'information à chercher

When... → indication de temps Whose... → propriétaire

How much... → quantité, prix Can... / Is... / Does... → réponse oui-non

- → Méfiez-vous des mots attrayants!
- Les homophones : right / write
- Les mots identiques à ceux de l'énoncé mais avec un sens différent :
 right = droit / right = correct
- Les mots qui se ressemblent : eating / meeting ; lift / left
- Les mots identiques à ceux de l'énoncé mais qui ne répondent pas du tout à la question

Exemple:

Why are the technicians here?
(A) They should be here soon.

- (B) No, at the escalator.
- (C) To set up a new computer lab.
- → Certaines questions indirectes semblent avoir deux réponses possibles. Un seul choix possible !

Exemple:

Do you know what time the bus leaves?

- (A) Yes, I do.
- (B) At 3 P.M.
- (C) From the bus station.
- → Méfiez-vous de l'intonation ! En général, l'intonation est descendante dans une Wh-question et montante dans une yes/no question. Mais cela peut différer en fonction du contexte.
- → Si vous ne savez pas, répondez au hasard, vous n'aurez pas de pénalité et aurez une chance sur 3!

1. LES WH-QUESTIONS

→ Elle commence par un pronom interrogatif et a pour but de recueillir des renseignements.

ımaire	Les mots interrogati	fs
Informations recherchées	Exemples	
chose, idée, occupation	What equipment will you need?	De quel équipement aurez-vous besoin ?
moment, temps	When is the deadline to submit the project?	Quelle est la date limite pour soumettre le projet ?
lieu	Where are the new headquarters?	Où se trouve le nouveau siège social ?
choix, tri	Which day is better to travel?	Quel est le meilleur jour pour voyager ?
personne	Who will pick Ms. Chan up from the airport?	Qui va chercher Mme Chan à l'aéroport?
	Informations recherchées chose, idée, occupation moment, temps lieu choix, tri	Informations recherchées chose, idée, occupation Mhat equipment will you need? moment, temps When is the deadline to submit the project? lieu Where are the new headquarters? choix, tri Which day is better to travel?

Whose	propriétaire	Whose car is parked in the loading bay?	À qui est la voiture garée sur l'aire de chargement?
Why	raison	Why are the technicians here?	Pourquoi les techniciens sont-ils là?
What time	heure	What time will we arrive in Beijing?	À quelle heure arriverons-nous à Pékin ?
What like	caractère	What is the new trainee like?	Comment est le nouveau stagiaire?
How	moyen, manière	How would you like your parcel sent?	Quel mode d'expédition souhaitez-vous pour votre colis ?
How many	quantité dénombrable	How many photographs should be sent with the form?	Combien faut-il envoyer de photos avec le formulaire?
How much	quantité indénombrable	How much money should I take?	Combien d'argent dois-je prendre?
How long	durée	How long will it take for the repair?	Combien faudra-t-il de temps pour la réparation?
How about	réponse à une suggestion	How about traveling by train?	Et si on voyageait en train?
How often	fréquence	How often does the shuttle depart?	La navette part tous les combien?
How far	distance	How far is it to the airport?	À quelle distance se trouve l'aéroport?

Lisez les réponses et les indices puis complétez les questions avec les mots interrogatifs suivants.

How often	When	Which	Who	What	How long
Where	Why	How many	How	Whose	What time
Who	What	How long	How much	How far	What like

Qu	estions	Réponses	Indices
1	was the first person to arrive today?	It was Sally.	Une personne
2	can I find some photocopy paper?	We keep it in the cabinet on the left.	Un endroit
3	/ is the meeting?	Early tomorrow morning.	Une heure
4	didn't you call me yesterday?	I forgot!	Une raison
5	applicant did you prefer?	I liked the first one best.	Un choix
6	did you eat?	We all had the chicken.	Un objet
7	is Kim traveling to Cleveland?	He's flying.	Un moyen
8	?	She's young and very dynamic.	Une description
9	is the blue car parked outside?	It's mine!	Le propriétaire
10	people are attending the meeting?	Five.	Une quantité
11	time do we have?	Not very much.	Une quantité
12	is it to the post office?	Only about half a mile.	Une distance
13	is the mail collected?	Three times a day.	Une fréquence
14	have you been waiting?	Only a few minutes.	Une durée

Grammaire Les adverbes de fréquence

- → La question *How often* porte sur la fréquence d'un événement.
- → La bonne réponse comportera :
- Un adverbe de fréquence (placé avant le verbe principal ou après un auxiliaire)

never < hardly ever < rarely = seldom < occasionally < sometimes <often <usually < always

Ex.: He always arrives on time.

Il arrive toujours à l'heure.

He hardly ever arrives on time.

Il n'arrive presque jamais à l'heure.

Does she usually work in this office?

Est-ce qu'elle travaille dans ce bureau d'habitude ?

Ex.: They are sometimes behind schedule.

They have always lived in this town.

Ils ont parfois du retard sur le planning. Ils ont toujours habité dans cette ville.

- Une expression de fréquence qui se place en fin de phrase.

Every day (tous les jours/ chaque jour)

On Mondays (Tous les lundis, le lundi)

Once a day (une fois par jour)
Three times a month (trois fois par mois)

From 6 am to 4 pm (de 6 h du matin à 16 h)

At the weekends Le WE / Les WE

In the morning (le matin)

Every 2 weeks (toutes les deux semaines)

On Monday (ce lundi, lundi)

Twice a week (deux fois par semaine)

Several times a year (plusieurs fois par an)

At 7 pm / 7 o'clock (à 7 heures)

This weekend (ce WE)

In the evening (le soir)

Daily (quotidiennement) **Weekly** (toutes les semaines)

Yearly (tous les ans)

2. LES YES/NO QUESTIONS

→ Une yes/no question commence par un auxiliaire conjugué (be, have, do) ou par un auxiliaire modal (can, could, will, would...)

Ex.: Are you coming to the book fair?

Does she travel a lot?

Would you be willing to help me?

Venez-vous au salon du livre?

Est-ce qu'elle voyage beaucoup?

Seriez-vous d'accord pour m'aider?

→ La réponse à une yes/no question commence par Yes ou No ou une expression qui a le même sens : that's right, of course, I'm sorry, but...

Ex.: Is this a good time to talk?

Yes, let's go over the latest figures.

Sure, what did you want to know?

I'm afraid not, I'll be in a meeting soon.

I'd love to but I must phone Tim first.

Est-ce le bon moment pour discuter?

Oui, examinons les derniers chiffres.

Bien sûr, que vouliez-vous savoir?

Désolé, je vais bientôt entrer en réunion.

J'aimerais bien mais je dois d'abord appeler Tim.

→ Parfois la bonne réponse est indirecte et Yes / No ne sont pas mentionnés :

Ex.: Is the air conditioning system working again?

It has just been fixed.

The technician is coming tomorrow.

La climatisation fonctionne-t-elle à nouveau?

Elle vient juste d'être réparée.

Le technicien viendra demain.

Cochez la bonne réponse à chacune de ces questions fermées.

Is the office manager available?

A No, she's out of the office today.

(B) They are.

(C) The office is free.

Were those people the new office workers?

A Yes, he was.

B All new workers must attend a meeting.

O No, they were cleaners.

Weren't you going to hire two new workers?

A It certainly was.

B I decided to hire three.

O Prices are higher this year.

Does the new assistant live nearby?

A I'll need your assistance.

B She's leaving in five minutes.

© Yes, just five minutes away.

5 Don't you have a green car?	A My car is in the garage.
	No, mine's blue.
	© Green cars have more accidents.
6 Did you arrive on time?	A Yes, we got there just at the last minute.
	A rival company is dangerous.
	He always arrives on time.
7 Didn't they send the invoice?	Clients must pay within 60 days.
7 513	It arrived this morning.
	My voice is tired today.
8 Isn't she going to be late if she leaves now?	You're right, it's getting dark.
	The bus is always late.
	Not if she takes a taxi.
g Has the photocopier been fixed?	It's working perfectly now.
	B I have a lot of photocopies to do.
	© My copy has disappeared.
10 Haven't you finished the report yet?	A The airport isn't finished yet.
	B I didn't have enough time.
	O No thank you, not today.

3. LES QUESTION-TAGS

→ Les phrases terminées par des questions-tags, sont comme des yes/no questions. On attend une réponse par Yes ou No ou une confirmation de ce qui a été dit.

Exemple:

That is a big difference, isn't it?

- (A) The different people are arriving.
- (B) It is significant.
- (C) I beg to differ.

Grammaire Les question tags

- Un tag est une question courte formée avec be, have, do ou un auxiliaire modal (will, can, could, should, etc.).
- On ajoute un tag en fin de phrase pour demander à quelqu'un son accord ou son avis, ou pour obtenir une confirmation.
- Le tag reprend l'auxiliaire de la phrase à la forme inversée :
- si l'auxiliaire de la phrase est à la forme affirmative, le tag est à la forme négative :

La phrase contient	Le tag est formé avec	Exemples	
be	be	We're closing early today, aren't we? Nous fermons tôt aujourd'hui, n'est-ce pas?	
have	have	They have received a new offer, haven't they? Ils ont reçu une nouvelle offre, non?	
un auxiliaire modal	le même modal	(will) – The two companies will merge, won't they? Les deux sociétés vont fusionner, non? (should) – You should check with the airline, shouldn't you? Vous devriez vérifier auprès la compagnie aérienne, non? (could) – We could arrive the next morning, couldn't we? Nous pourrions arriver le lendemain matin, non?	
un verbe	do	You drink tea, don't you? Vous buvez bien du thé?	

si l'auxiliaire de la phrase est à la forme négative, le tag est à la forme affirmative :

Ex			

We're not closing early today, are we? Nous ne fermons pas tôt aujourd'hui, n'est-ce pas? They haven't got a new offer, have they? Ils n'ont pas de nouvelle offre, si?

You don't drink tea, do you? Vous ne buvez pas de thé, si?

- (will) The two companies won't merge, will they? Les deux sociétés ne vont pas fusionner, si?
- (could) You couldn't come tomorrow instead, could you? Vous ne pourriez pas venir demain à la place, non?
- (can) We can't expect to do as well as last year, can we?
 On ne peut pas s'attendre à faire aussi bien que l'an dernier, si?

Ajoutez le tag qui convient à chaque phrase.

1	You can speak Russian,?
2	There isn't any paper left in the machine,?
3	There were fifty new employees last year,
4	Your manager has decided to leave,?
5	You haven't made your decision yet,?
6	Only Marielle was present during the theft,

S'il y a un auxiliaire, on l'utilise (be, do, have, can, must, will....)

S'il n'y a pas d'auxiliaire, on utilise *do/does* au présent simple et *did* au prétérit simple.

- 7 You remembered to turn off the lights,?
 8 Our plan is complicated, but it is going to work,?
 9 We could ask for a subsidy,?
- 10 The workers on the first shift start at 6 in the morning,?

4. LES QUESTIONS INDIRECTES

- → Une question indirecte est une question dans une autre question.

 Do you know (question 1) when the flight arrives (question 2 cachée)?
- Le question 1 respecte l'ordre des mots de la question normale : Could you tell me ..., Do you remember...
- La question cachée (celle à laquelle il faut répondre) reprend l'ordre des mots d'une phrase affirmative. ...when the best moment to reach him is ?

Questions directes	Questions indirectes		
When is my appointment? Why wasn't the invoice paid? How do I get to the post office? Is the assistant manager available?	Can you tell me	when my appointment is? why the invoice wasn't paid? how I get to the post office? if the assistant manager is available?	

→ Attention aux éléments attrayants.

Exemple:

Do you remember where you left the keys?

- (A) Yes, I do.
- (B) The keys have disappeared.
- (C) I left them at reception.

rammaire	Les prépositions de ten	nps	
Prépositions	Emplois		Exemples
on	Devant une date ou un jour précis	on Monday on Christmas Day on June 5th on the first day of work on the weekend	lundi le jour de Noël le 5 juin le premier jour de travail le/ce week-end
at	Devant une heure, un moment de l'année	at 2.15 at midnight at lunchtime at night at Christmas at the end of June	à 2h15 à minuit à l'heure du déjeuner la nuit à Noël fin juin
Devant les mois, années, saisons, les moments de la journée (sauf la nuit), avec une durée, un délai ø (pas de préposition)	in January / August in 2018 / 1776 in spring / summer in the morning in the afternoon in the evening in two minutes	en janvier, en août en 2018, en 1776 au printemps, en été le matin l'après-midi le soir dans deux minutes	
	last week next spring yesterday tomorrow	la semaine dernière au printemps prochain hier demain	

→ In, on et at sont les prépositions les plus courantes dans le test TOEIC.

→ Within et by sont aussi souvent utilisées.

Ex.: You must pay within 90 days.

Vous devez payer dans les 90 jours.

We must be there by 5 P.M.

On doit y être pour 17h.

Complétez les phrases avec at, in ou on, ou ø si aucune préposition n'est nécessaire.

1	How about	meeting	here	Monday	٧?
---	-----------	---------	------	--------	----

2 Actually, I finished working on my slides last week.

3 I think we'll go to Brazil next summer.

4 I'll see you lunchtime!

5 Our company was established 1987.

6 Hurry up! They are unveiling our work 5 minutes.

7 What are you doing Thanksgiving?

8 Our facilities must be operational next spring.

9 Jake told me that you saw him at a conference yesterday.

10 The company picnic always takes place weekends.

5. LES DEMANDES POLIES

→ On parle ici des propositions, des suggestions et des offres d'aide.

Exemple:

Could you replace Iris while she is on sick leave?

- (A) Of course I can.
- (B) I feel a little sick.
- (C) We leave at six.

→ Les demandes polies sont formées avec un auxiliaire modal :

- Can / could / would pour une requête : Would you let us use your premises ?

- **Shall** pour une **suggestion**: **Shall** I make them a ne offer?

Would you like to see a sample ?

- Would you like pour proposer quelque chose: Would you like to see a sample?

May pour demander la permission:

May I ask you a question?

Cochez la bonne réponse à ces questions.

1 Would you hold the door open for me please?

A The doors open at 9 every day.

B I'd be pleased to.

We hold a meeting every Monday.

2 Would you like some help?

A I can manage, thanks.

B I like helping people.

Thank you for helping me.

3 Shall we stop for lunch now?

A There's a great new restaurant on 5th Avenue.

B I can do the copies after lunch.

(C) I'd rather finish this first.

4 May I contact you by phone again next week?

A The phone signal is weak.

B In May would be a good time.

That would be fine.

Grammaire

Like - Would like - Be like

- → Like exprime une généralité. C'est un verbe.
- → Would like exprime un désir, une préférence dans une situation donnée.

Do you like tea? I like coffee.

Would you like some tea? I would like some coffee.

→ Be like s'emploie pour décrire quelque chose. Ici like est une préposition.

Your new office is very much like the old one.

What is your CEO like?

→ Ne confondez pas les questions

What **do** you like? qui interroge sur les goûts

What are you like? qui interroge sur les traits de caractère

Choisissez la bonne réponse en faisant attention aux possibles confusions.

1 Would you like something to drink?

A I like coffee.

(B) I'll have a coffee.

C The coffee is in the pot.

2 What is the new beverage like?

A No thank you, I'm not thirsty.

The Marketing Department says it is refreshing.

C Yes, I would like a soda.

3 There is a new movie theater in the mall.

(A) I'd like to do that.

(B) What is she like?

C Would you like to go?

4 Do you like sleeping on the train? A I like taking the train. (B) I'd like to sleep tonight. C I find it very relaxing. A I like to get to airports with plenty of time. 5 Why are you leaving early? B That's what I like about you. C I know what she likes.

6. LES QUESTIONS AVEC UN CHOIX

→ Certaines questions avec **or** proposent un choix.

Ex.: Would you prefer fries or vegetables? Are you free on the 1st, 2nd or 3rd of June?

La réponse peut être directe (l'd prefer vegetables. l'm free on the 2nd) ou indirecte avec des mots comme either, neither, both, any, all ou none.

Either et neither s'emploient toujours avec un verbe au singulier.

Grammaire	Either, neither, both, none			
Un choix entre	Either L'un ou l'autre, Les deux Neither	Either is okay. L'un ou l'autre / Les deux me conviennent. Neither is okay.		
deux choses, deux personnes	Ni l'un ni l'autre Aucun des deux	Ni l'un ni l'autre ne me conviennent. Aucun des deux ne me convient.		
	Both Les deux	Could I have both? Pourrais-je avoir les deux?		
	Any N'importe quel	Any day in June suits me. N'importe quel jour de juin me convient.		
Un choix plus large (à partir de trois)	All Tous	All those dates are fine. Toutes ces dates me vont.		
	None Aucun	None of those dates suit me. Aucune de ces dates ne me convient,		

7. LES AFFIRMATIONS

- → Même si la plupart des énoncés de Part 2 sont des questions, parfois ce sont des affirmations : échanges de politesse, quelqu'un qui donne son avis ou qui fait une constatation.
- → Souvent la réponse sera une question pour obtenir un renseignement ou proposer quelque chose en réaction à ce qui vient d'être dit.
- → La réponse peut aussi exprimer l'accord ou le désaccord ou une réaction à l'énoncé.

I can't access the file. \rightarrow You need a password for that. We're all going out for lunch tomorrow. \rightarrow That sounds nice.

Exemple:

I'm so hungry!

- (A) I didn't have breakfast.
- (B) Shall we stop for lunch?
- (C) Why are you angry?

Reliez chaque affirmation à la réponse la plus logique. Faites attention aux temps employés.

- 1 Last night's meal was excellent.
- · I'm leaving in a few minutes.
- 2 Be careful you don't miss your flight. •
- · You need a new one.

3 The traffic was dense today.

· She has a lot of experience.

4 We need to hire a new manager.

It may be too costly.

5 My phone has stopped working.

· There was an accident.

6 Helen is a great manager.

· Well, it was very expensive.

LISTENING	PART 3	
DIALOGUES		

TIPS:

- → Il faut anticiper et lire les questions AVANT que le dialogue ne soit diffusé afin de savoir quelles informations il vous faut cibler à l'écoute.
- → Pour anticiper, connaissez bien les consignes de cette partie 3 ; Ainsi vous n'aurez pas à les écouter et vous pourrez lire les trois premières questions avant la diffusion du premier dialogue.
- → Après le dialogue le narrateur lit les trois questions. Si vous avez déjà répondu, commencez à lire les 3 questions portant sur la conversation suivante.
- → Si vous avez eu du mal à comprendre un dialogue ou si vous vous êtes déconcentré(e), procédez par élimination.
- → Au pire, sacrifiez une série de 3 questions, répondez au hasard. Pas de pénalité. Anticipez la lecture des 3 questions suivantes.

1. LES TYPES DE QUESTIONS DE PART 3

→ Les questions de déduction.

Déduction d'une information générale à partir du dialogue : le métier d'une personne, l'endroit où se déroule la conversation, de quoi parlent les interlocuteurs.

Les mots most likely ou probably confirment que la question porte sur la compréhension globale.

Where most likely are the speakers?

Who most likely is the man?

Where does the woman work?

→ Les questions sur le sens d'une phrase.

Soit la question porte sur la compréhension globale du dialogue :

What does the woman mean when she says: 'I've been meaning to contact them.'

Soit la question porte sur le sens d'une expression courante :

What does the man mean when he says: 'if you wouldn't mind'?

→ Les questions sur la suite des actions.

What will the woman do next? What will probably happen next?

→ Les questions avec un document visuel.

Quand un document visuel est associé à l'une des questions, regardez-le tout de suite car son contenu / titre vous aideront à identifier le contexte de la conversation : discount coupon, order form, store layout, nutrition information

Attention, c'est un exercice oral! Répondre à l'aide du document ne suffit pas! Il faut aller y chercher des informations tout en tenant compte du dialogue.

2. LES METIERS

Avec quel métier associez-vous ces mots ? Écrivez le nom du métier à la suite des mots qui lui correspondent.

real estate agent cab driver flight attendant cashier construction worker gardener

truck driver office worker

dentist hotel receptionist

Indices	Métier
fare, tip, meter, driver, passenger, heading to, change	
load, unload, loading bay, delivery, package, shipment, pallet	
dig, spade, weed, prune, lawn, mower, hedge, flower bed, hosepipe	
checkout, cash register, line, charge, return, discount, customer	
drill, spit, cavity, whiten, filling, hygienist, checkup	
desk, office, cubicle, computer, telephone, printer	
overhead locker, baggage, carry-on, boarding pass, gate, beverage	
lease, tenant, homeowner, landlord, deposit, property	
check in, check out, wake-up call, room service, porter, keycard	
blueprints, building, hard hat, building site, concrete, safety footwear	

3. LA DUREE, LA FREQUENCE, LA QUANTITE

→ La bonne réponse peut être donnée sous forme de paragraphe, de reformulation.

Ce que dit le dialogue	Questions	Réponses (paraphrases)
We visit the factory every other month. Nous visitons I'usine un mois sur deux.	How often do they visit the factory? À quelle fréquence se rendent-ils à l'usine ?	Once every two months Tous les deux mois
We have half a dozen stores in this state. Nous possédons une demi-douzaine de magasins dans cet État.	How many stores does the company have? Combien de magasins la société possède-t-elle?	Six
The CEO will be present for a week. Le PDG sera présent pendant une semaine.	How long will the CEO be present? Pendant combien de temps le PDG sera-t-il présent?	Seven days Sept jours
The deadline is the first day of July. La date butoir est le premier jui llet .	When is the deadline? Quand est la date butoir ?	In two months Dans deux mois

Reliez les mots et expressions de la première colonne à leur paraphrase dans la deuxième.

1 once a year a quarter 2 every other day twelve 3 fifty percent 12 o'clock 4 a dozen Monday, Wednesday and Friday quarterly 5 25% 6 every 3 months . this afternoon 7 noon annually 8 two weeks a fortnight 9 after lunch half

Vocabulaire Les mesures américaines

Mesures	Unité	Conversion
de langueur	inch yard mile	1 inch = 2,54 centimètres 1 yard = 92,4 centimètres 1 mile = 1,6 kilomètre
de volume	gallon	1 gation = 3,785 litres
de masse	ounce	1 punce = 28,35 grammes 1 pound = 0,454 kilogramme
de température	degrees Fahrenheit	32" Fahrenheit = 0" Ceisius 86" Fahrenheit = 30" Ceisius

Les Américains utilisent les mesures de longueur, de masse, de volume dites « impériales » (inches, gallons, miles, yards...). Vous n'aurez jamais besoin de convertir ces unités. Mais sachez les repérer dans un document audio.

LISTENING	PART 4
SHORT TALKS	

TIPS:

- Il faut anticiper et lire les questions AVANT que le monologue ne soit diffusé afin de savoir quelles informations il vous faut cibler à l'écoute.
- Pour anticiper, connaissez bien les consignes de cette partie 4. Vous n'aurez pas à les écouter et vous pourrez lire les trois premières questions avant la diffusion du premier monologue.
- Après le monologue le narrateur lit les trois questions. Si vous avez déjà répondu, commencez à lire les 3 questions portant sur le monologue suivant.
- Si vous avez eu du mal à comprendre un monologue ou si vous vous êtes déconcentré(e), procédez par élimination pour choisir la bonne réponse.
- Au pire, sacrifiez une série de 3 questions, répondez au hasard. Pas de pénalité. Anticipez la lecture des 3 questions suivantes.
- Les questions de la partie 4 sont, comme en partie 3, des questions de compréhension, de déduction et des questions portant sur la suite de l'histoire.

1. LES DIFFERENTS CONTEXTES

→ Le narrateur vous indique quel type de document audio il s'agit. Appuyez-vous sur cet élément et repérez les mots clés.

Ex.: Questions 71 through 73 refer to the following recorded message. (message enregistré)

Associez chaque phrase (A, B, C...) avec le lieu ou l'occasion (1, 2, 3...) où elle a pu être prononcée.

- (A) I'm calling to tell you about our latest special offer.
- (B) And if you mention this advertisement, you'll receive an extra 5% off!
- (C) Don't miss today's special offer and thank you for shopping at Lundgren's.
- (D) I would like to thank Mr. Buren for his many years of loyal service.
- (E) Please leave your message after the tone.
- (F) Make sure you turn off the electricity before unplugging the machine.
- (G) I am pleased to welcome Ms. Martina Freeman to the studio today.
- (H) Now, if you'll turn to page 4 in the initiation manual, you will see the contents page.
- (I) Please make your way to gate 4 immediately.
- (J) Can I bring you anything to drink?
- (K) On behalf of tonight's cast, we hope you enjoy tonight's performance.
- (L) We are currently cruising at an altitude of 38 000 feet.

1	At the airport	phrase	7	In a radio advertisement	phrase
2	At a retirement celebration	phrase	8	On a plane	phrase
3	In a store	phrase	9	In instructions	phrase
4	In a company	phrase	10	In a restaurant	phrase
5	On the air	phrase	11	In an incoming telephone message	phrase
6	In a theater	phrase	12	In an outgoing telephone message	phrase

2. LES ANNONCES ENREGISTREES

→ Les annonces enregistrées peuvent être des annonces de gare ou de magasin, un message téléphonique, une publicité à la radio. Certaines expressions typiques vous guideront pour déduire le type d'annoce que vous entendez et trouvez les réponses.

Ecrivez (1) (in a bus station), (2) (telephone message) ou (3) (in a museum) à côté des termes ci-dessous.

In	a bus station	Telephone messag	le In a i	museum
gift shop	Attention passengers	exhibition	ticket inspector	late opening
This is	pound key	hold (nom)	Please hold	will be closing
coach	Push 3	wing	bus	after the beep/tone
terminus	You can reach me at	make your way	Thank you for calling	

Les prépositions Exercice

Complétez le texte avec les prépositions de la liste.

with - for - at - at - to - in

N	Attention passengers to San Diego, this is your final call. The 12.55 Santa Ana - San Diego Express coach will be leaving
	5 minutes. Passengers bound San Diego are requested to present themselves
	coach bay 7 for immediate boarding. Passengers whose names start letters A through K may board
	coach rear, passengers whose names start with letters L through Z, please go to the front of the vehicle.
	Passengers with mobility problems or other special needs, please make yourself known a Blue Dog Bus
	crew member, who will inform the driver. This bus will not be making any stops.

Le vocabulaire Exercice

Choisissez la bonne proposition.

W Good evening visitors. This message is to remember / remind you that the West Coast Museum will be closing in thirty minutes. Please start to make your way towards the exhibition / display exits, where you can return your audio guides, retrieve / return your coats and other affairs / belongings and visit the gift shop, which will remain open until 7.30 P.M. We hope you enjoyed your visit today.

I am informed that a small object of cost / value has been found in the West Wing. If you have lost something and can identify this object, please come to the Lost and Found office opposite the escalators.

3. LES SITUATIONS PROFESSIONNELLES

Écrivez ces mots et expressions dans la colonne qui convient ; certains peuvent aller dans plusieurs domaines.

show of hands career kick off emergency shutdown award protective clothing

interrupt Make sure you... a token of gratitude procedure

agenda May I say something? chair safety We will miss you manual

Thanks speech	Instructions	In a meeting

Exercice

Les prépositions

Complétez le texte avec les prépositions de la liste.

from - at - of - among - for - for - to

l	There aren't many us	who do not remember his friendly face	their first day at Telty.
	Jon has always been outstanding	his job; made lives easier for us and	d our clients; who always had a taxi
	waiting them when lea	aving our premises and booked the best hotels f	for us. Never a day off sick, nothing
	but positive feedback. On behalf	all the staff, I'd like to thank you	all these years of service
	and to present you with a small toke	n of our gratitude. What else can I say? You will	be dearly missed!
	Jon Bronson, may you	ur free time be profitable!	

Exercice La grammaire

Choisissez la bonne proposition en gras pour compléter les phrases.

M Good morning everybody, nice to see you all here. I hope you didn't have too much / many problems with the traffic on the way in. Ah, I see the Head of Finance has not arrived already / yet. Well, before I hand the meeting over to Juanita, I'd like to know who will be eat / eating here at lunchtime. I have organized a wonderful caterer to deliver fresh / freshly made sandwiches, but I need to let them know how many, and of which / whose type. There is the usual choice of chicken, ham, cheese either / or vegetarian. Could I start with a show of hands for chicken?

4. LA METEO

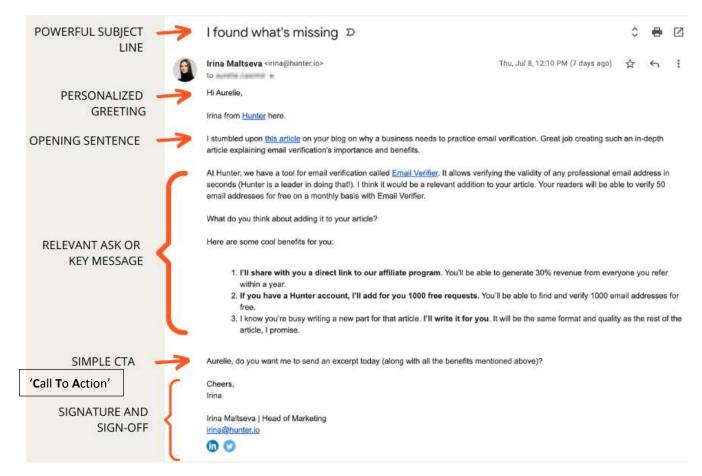
routes glissantes prévision/prévoir sécheresse gelée souffler fortes pluies nondation	orage averse geler couvert nuageux éclaircie ensoleillé	anticyclone brouillard venteux précipitation tremblement de terre brise foudre	pluvieux doux tempête de neige chute de neige canicule verglas dangereux
black ice (n)		heavy rain (n)	
blow (vb)		high pressure (n)	1
breeze (n)		lightning (n)	
bright (adj)		mild (adj)	
cloudy (adj)		overcast (adj)	
drought (n)		rainfall (n)	
earthquake (n)		shower (n)	
flood, flooding (n)		slippery roads (n)	
fog (n)		snowfall (n)	
freeze (vb)		snowstorm (n)	
frost (n)		sunny interval/spell (n)	
forecast (n/vb)		thunderstorm (n)	
hazardous (adj)		wet (n)	
heatwave (n)		windy (adj)	

Reliez les mots des deux colonnes pour reconstituer des expressions courantes.

1	a clap	•	•	gales
2	dense	•	•	weather conditions
3	flash	•	•	of thunder
4	freak	•	•	temperatures
5	high	•	•	storms
6	severe	•	•	rain
7	torrential	•	•	floods
8	violent	•	•	fog

CHECK 7

WRITING AN EMAIL



COMPOSITION				
Subject line	Very important – you want the email to be opened!			
	Meeting date change / Questions about the conference / Can you meet on Monday ? /			
	Suggestion for your presentation			
Salutation	- Casual opening : Hi / Hello Jane,			
	- Unknown recipient : Dear Sir or Madam, / To whom it may concern,			
	- Adressing a team, a group: Hi team, / Hi all,			
	- Emailing someone for the first time: Dear Mr. / Mrs. / Miss / Ms Smith			
Body	KISS: Keep it short and simple!			
	I'm writing this email to express my dissatisfaction / to complain about / in response to			
	your ad, your request / in regard to			
	I would be grateful if you could + infinitive. / I would like to + infinitive / I'd like to enquire			
	about			
	We would like to apologize for any inconvenience caused.			
	Please accept our apologies for the delay / for the problem caused.			
	Thank you so much for answering / Thanks for your email.			
Closing	If you have any further questions, please contact			
Signature off	Unformal: Thanks, Cheers, Talk soon, Take care,			
	Formal: Thank you for your time, I look forward to hearing from you, Best, Regards,			
	Sincerely, Sincerely Yours, Thanks so much, All the best, Best wishes, Respectfully,			
Six steps for writing professional emails				
 Identify 	your goal: what do you want the recipient to do after they've read it?			
2. Conside	er your audience. 3. Keep it concise. 4. Proofread your email.			
5. Use pro	oper etiquette. 6. Remember to follow up. 7. Subject line.			
8. Salutati	ion. 9. Use Cc / Cci if needed			



→ Linking words in English with pronounciation

https://youtu.be/STiQ4BEV8ug



→ How to use linking words

https://youtu.be/j2YsroEPH5M



→ Train with Quizlet

https://quizlet.com/fr/365291266/anglais-link-words-diagram/



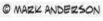
→ Exercises



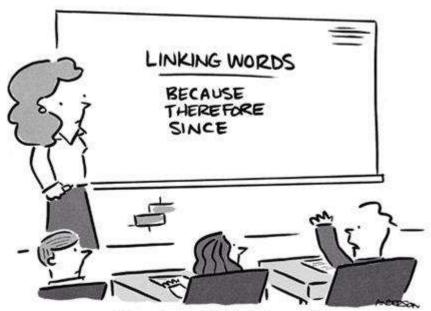








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"You forgot 'Click here.""

EXPRESSING AN OPINION

Expressing a personal	Agreeing	Disagreeing	
opinion			
In my opinion	I agree (with / with you)	I don't agree / disagree (with	
In my view	about	/ with you / with that)	
To my mind	I couldn't agree more.	about	
As far as I'm concerned	I feel the same (about)	I'm sorry but I'm of a	
As for me	That's a good point.	different opinion	
I (really) feel that	You took the words right out	Sorry, I can't accept your	
I (strongly) believe (that)	of my mouth.	opinion bacause	
Well, I reckon (that)	You're so / absolutely right!	I'm afraid I disagree.	
I would say that	So true!	That's not the way I see it.	
It seems to me that	Absolutely! Definitely!	I don't think so.	
Personally speaking I	Exactly !	Partly disagreeing	
believe	No doubt about it !	You make a good point, but	
		I agree with you to an	
		extend, however	
Stating something as a	Expressing personal doubt	Asking for opinion	
fact			
Everyone knows that	I'm not sure if	What do you think / reckon ?	
It is normally accepted that	I'm not satisfied that	Do you see what I'm getting	
Ther ecan be no doubt that	I'm not convinced that	at ?	
As everybody knows	I doubt that	Do you know / see what I	
		mean ?	
		Would you go along with	
		that ?	
		Don't you think that ?	
Giving reasons	Enumeration of points	Gap fillers in conversation	
I tell you all this because	In addition to that	By the way	
I base my argument on	Moreover	What I mean is	
This is what I'm thinking	Furthermore	So	
because	First of all, I would like to	Anyway	
	say	Well	
	Second / third / Then / Next		

→ The 8 best and easiest ways of giving opinions

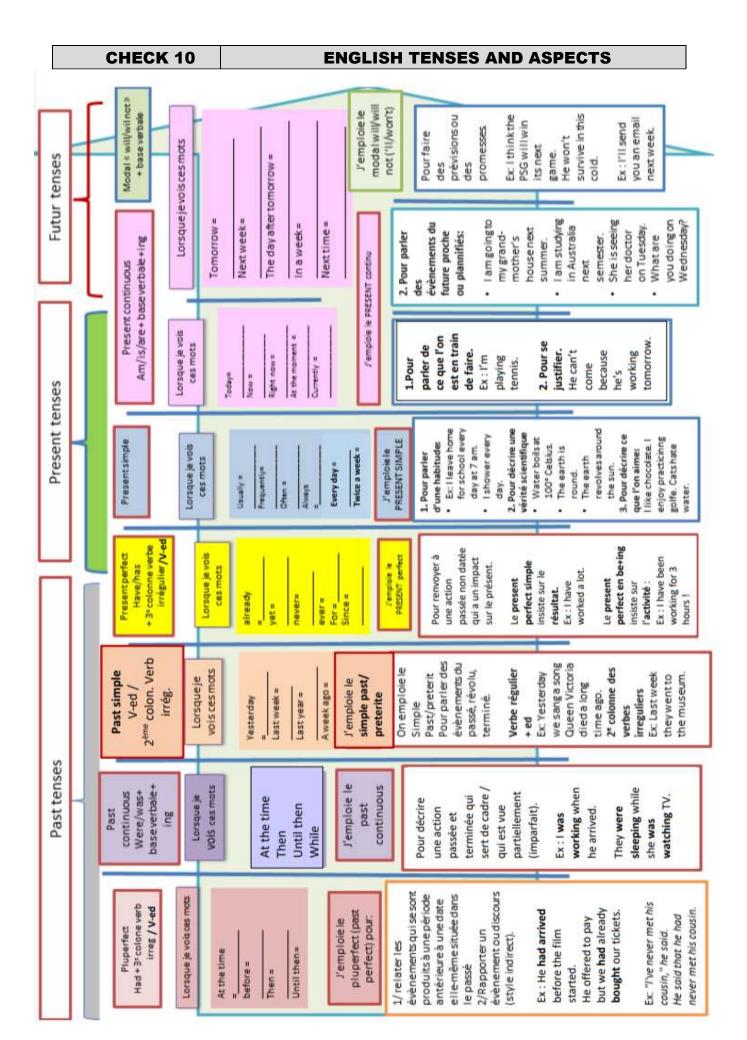
https://youtu.be/g6ZLBdA1t3o



→ How to express and support your opinion in English

https://youtu.be/fa2W8VFdLU4





Fill in the blanks using the correct form of the verbs.

- 1. The minister had hardly finished his speech when the earthquake (shake) the building.
- 2. Everybody will be at the office at about 08:30 tomorrow as the meeting (start) at nine o'clock.
- 3. The candidate who we had interviewed before we (speak) to any others is still my favorite.
- 4. While climbing the mountain, we (encounter) a strange animal which I'd never seen before.
- 5. The chairman was sure that his proposal would be accepted as no other member (oppose) it up to that time.
- 6. I wasn't surprised to hear that Monica (have) an accident because she is such a reckless driver.
- 7. Since the day the management changed and started running risky experiments, very strange incidents (take place) within the research complex.
- 8-9. Urbanization (always / be) a problem causing several environmental issues ever since the rate of migration (increase) after the industrial revolution.
- 10. When I (come) home this evening, my parents had gone out for a walk.
- 11. By the time the troops (arrive), the war will have ended.
- 12. By the year 2050, linguists (study) the Indy-European language family for more than 200 years.
- 13. Increasing fuel prices (become) a major problem for people for the last ten years, therefore, during this time many people have preferred to sell their cars and buy smaller ones.
- 14. By the time he was 14, Wolfgang Mozart (compose) an enviable number of musical pieces.
- 15. Archaeologists (explain) recently how an ancient underground city in Cappadocia was used for making cheese and wine for years.
- 16. I was very surprised when he accepted to eat meat since I (always / assume) that he was a vegetarian.
- 17. I (play) tennis tomorrow but I won't be able to do that because I have injured my right ankle.
- 18. We (visit) the seashore many times before, but last summer we enjoyed ourselves more than ever.
- 19. According to a study, thousands of vending machines (need / modify) before we can use the new coins.

→ More training here!



CHECKING IRREGULAR VERBS

Infinitif	Prétérit=simple past	Participe passé	Traduction
	• •	•	
Be	was / were	been	être
bear	bore	borne	supporter
beat	beat	beaten	battre
become	became	become	devenir
begin	began	begun	commencer
bend	bent	bent	courber
bet	bet	bet	parier
bid	bid	bid	faire une enchère
bid	bade / bid (US)	bid / bidden	ordonner
bite	bit	bitten	mordre
bleed	bled	bled	saigner
blow	blew	blown	souffler
break	broke	broken	casser
breed	bred	bred	élever
bring	brought	brought	apporter
build	built	built	construire
burn	burnt / burned	burnt / burned	brûler
burst	burst	burst	éclater
buy	bought	bought	acheter
Cast	cast	cast	lancer
catch	caught	caught	attraper
choose	chose	chosen	choisir
come	came	come	venir
cost	cost	cost	coûter
creep	crept	crept	ramper
cut	cut	cut	couper
Deal	dealt	dealt	distribuer
dig	dug	dug	creuser
dive	dove	dived	plonger
do	did	done	faire
draw	drew	drawn	dessiner
dream	dreamt / dream	ed dreamt / dreame	ed rêver
drink	drank	drunk	boire
drive	drove	driven	conduire
Eat	ate	eaten	manger
Fall	fell	fallen	tomber
feed	fed	fed	nourrir
feel	felt	felt	se sentir
fight	fought	fought	combattre
find	found	found	trouver
flee	fled	fled	fuir
fly	flew	flown	voler (mouvement)
forbid	forbad/forbade	(US) forbidden	interdire
forget	forgot	forgotten	oublier

forgive	forgave	forgiven	pardonner
freeze	froze	frozen	geler
Get	got	got	obtenir
give	gave	given	donner
go	went	gone	aller
Hang	hung	hung	pendre
hear	heard	heard	entendre
hide	hid	hid(den)	cacher
hit	hit	hit	frapper
hold	held	held	tenir
hurt	hurt	hurt	blesser
Keep	kept	kept	garder
kneel	knelt	knelt	s'agenouiller
know	knew	known	connaître
Lay	laid	laid	poser (à plat)
lead	led	led	mener
lean	leant / leaned	leant / leaned	pencher
leap	leapt	leapt	bondir
learn leave	learnt / learned left	learnt / learned left	apprendre
lend	lent	lent	quitter prêter
let	let	let	laisser
lie	lay	lain	être allongé
light	lit / lighted	lit / lighted	éclairer
lose	lost	lost	perdre
Make	made	made	faire
mean	meant	meant	signifier
Pay	paid	paid	payer
put	put	put	mettre
Quit	quit / quitted	quit / quitted	arrêter
Read	read	read	lire
ride	rode	ridden	chevaucher
ring	rang	rung	sonner
rise	rose	risen	s'élever
run	ran	run	courir
Saw	sawed	sawn	scier
say	said	said	dire
see	saw	seen	voir
seek	sought	sought	chercher
sell .	sold	sold	vendre
send	sent	sent	envoyer
set shake	set shook	set shaken	placer
shed	shed	shed	secouer verser
shine	shone	shone	briller
shoot	shot	shot	tirer (arme)
			()

showed show shown monter shrink shrank shrunk rétrécir shut shut shut fermer sing sung chanter sang sink sunk couler (bateau) sank sit sat sat être assis sleep slept slept dormir slide slid slid glisser smelt / smelled smelt / smelled smell sentir speak spoke spoken parler speed sped sped aller vite spell spelt / spelled spelt / spelled épeler spend spent spent dépenser spill spilt / spilled spilt / spilled renverser faire tourner spin span / spun spun spit spat / spit spat / spit cracher split split split fendre spoilt / spoiled gâcher spoil spoilt / spoiled spread spread spread répandre spring sprang / sprung bondir sprung stand être debout stood stood steal stole stolen voler (qqch) stick stuck stuck coller stink stank / stunk stunk puer strike struck struck frapper string strung strung enfiler swear swore sworn jurer sweep swept swept balayer swim swam swum nager swing swung swung se balancer Take took taken prendre teach taught taught enseigner tore torn tear déchirer tell told told dire think thought thought penser throw threw thrown lancer tread trod fouler trod(den) understood understood comprendre Understand undertake undertook undertaken entreprendre

upset upset upset bouleverser woke woken réveiller Wake

wear worn porter (vêtement) wore

weep wept wept sangloter wind wound wound enrouler win won won gagner withdraw withdrew withdrawn retirer write wrote written écrire