

<b>Functional Holidays</b>	
<i>Thématique 1- savoirs création, innovation, Axe 2; sciences et techniques, promesse et défi</i> Holidays. A necessity, a state of mind or an opportunity?	
	What nurtures the trend of extreme holidays?
At the end of the Unit, I will	Attract tourist into an extreme type of holidays
What documents will be used ?	<p><b>1- 1- Going with a purpose</b>                      1a- a-The grand Tour, video History shorts by Artifactual Scholar, 2017                      1b- 1b- A history of holidays, <i>Tim Lambert</i>, localhistories.org, <i>updated 2023</i>                      1c- “I always hated holidays...”, David Lodge, Paradise New, 1991</p> <p><b>2- going influenced2</b>                      a- Kristin Mariano, <i>www.traveldailymedia.com</i>, Feb 5, 2020                      2b-Social Media influence on Travel Booking in Britain 2017, by generation, <i>www.we-like-travel.com</i>                      2c- <a href="http://www.hotelogix.com">www.hotelogix.com</a>, reviews infographic</p> <p><b>3- Going sustainable</b>                      3a- 50% of tourists want sustainable holidays despite higher costs, Gregoire Lory, Euronews, <i>28/06/2023</i>                      3b- Hotels at the forefront of sustainability (photos)                      3c- Americans Say They Want Eco-Friendly Vacations. But Few Make It a Priority, Alejandro de la Garza, Time.com, <i>June 22, 2023</i> Time.com</p> <p><b>4- Going extreme</b>                      4a- How Space Tourism Will Change the World, <i>Brooke Nelson</i>, Reader's Digest, Rd.com, Jun. 05, 2023                      4b- How underwater and deep-sea tourism became so popular, Ulrike Lemmin-Woolfrey, BBC.com/ travel, <i>20th June 2023</i></p> <p><b>5- Smart tourism</b>                      5a- AI can help you plan your next trip—if you know how to ask. The Future Of The Tourism Industry Is SMART, Dr Hayley Stainton, 2022 (vidéo)</p>
What will I learn about ?	How going on holidays may bring some progress The
Final Task	You will introduce one of your classmate to a certain type of holidays and make it as attractive as possible

**INSTRUCTION FOR YOUR FINAL TASK:**

1- you will get to know what your classmates are expecting

2- You will interview at least 4 people in the class to get to know them better and understand their need

3- You will need to get 3 types of holidays ready but you will only introduce us to one, picked randomly by your teacher

4- You must keep in mind that those holidays must be functional. For you at least.

### 1- Going with a purpose

1a-The grand Tour, video History shorts by Artifactual Scholar, 2017

<https://www.youtube.com/watch?v=BF3SJ6qkCJc> :

travail sur la vidéo => what purpose? Prise de notes puis remise en commun:

aristocrats

educational purpose

for the future activities in parliemant

Italy as final destination => Rome, ancient Rome idea of Empire

Naples / Pompei,

lessons of Antiquity =>

souvenirs were taken then German did the same

19<sup>th</sup> and 20<sup>th</sup> : American

re imagining the architecture : neo-classism

=> influence des anciens sur les nouveaux, purpose des holidays / Tourism

1b- A history of holidays, *Tim Lambert*, localhistories.org, *updated 2023*

<https://localhistories.org/a-history-of-holidays/>

travail sur le texte en 2 parties: Early Holidays et Modern Holidays

appropriation en binôme puis échange sur les textes en group work

recap écrit avec son binôme initiale (10 / 15 lignes) et proposition de 2.0 Holidays => what purpose for the up-coming holidays ? Réflexion autour des attentes et de ce qu'on pourrait vouloir des prochaines holidays (noté)

1- j'ai résumé les idées principales du texte a history of holidays

2- mon résumé était clair, étayé et logique

3- j'ai mené une réflexion sur ce qu'on pouvait attendre des prochaines vacances

4- mes propositions étaient intéressantes

5- mes propositions étaient innovantes

6- mes propositions servaient un but

7- Richesse lexicale

8- Richesse grammaticale

1c- "I always hated holidays...", David Lodge, Paradise New, 1991

### 2- going influenced

2a- Kristin Mariano, *www.traveldailymedia.com*, Feb 5, 2020

2b-Social Media influence on Travel Booking in Britain 2017, by generation, *www.we-like-travel.com*

2c- [www.hotelogix.com](http://www.hotelogix.com), reviews infographic

étude des 3 documents en group work (les imprimer) => conclusion en commun puis rédaction d'un avis sur hotel / lieu de vacances au choix, possibilité de l'illustrer.

Présentation à soigner: type vrai publication en ligne → prendre en compte les éléments imposés âge, budget, positi, négatif

échange et faire lire en classe → rédaction de la réponse par un autre groupe (éventuellement noté)

### 3- Going sustainable

3a- 3a- 50% of tourists want sustainable holidays despite higher costs, Gregoire Lory, Euronews, 28/06/2023

travail de repérage de définition:

**sustainable:** able to be maintained at a certain rate or level.

**Accommodation:** a room, group of rooms, or building in which someone may live or stay

**carbon footprint:** a measure of the amount of carbon dioxide released into the atmosphere as a result of the activities of a particular individual, organization, or community

**challenges:** call to someone to participate in a competitive situation or fight to decide who is superior in terms of ability or strength

Imaginer les questions du survey qui ont permis d'arriver à cette conclusion + orienter vers quels types de vacances pourraient intéresser les camarades (possibilité de travailler en binôme mais chacun doit avoir sa feuille de réponse → pourra servir d'appui pour la TF)

(vidéo : <https://www.youtube.com/watch?v=oh7lb3UMFO0>)

3b- Photos: à partir de photos de lieu insolite de sustainable holidays, faire établir en binôme une liste de 5 points faibles et de 5 points forts qui pourraient faire de ce lieu un lieu idéal pour être sustainable.

Donner les lieux faits pour aux groupes les plus faibles, les moins appropriés à ceux qui sont les plus forts.

Échanger les photos et les listes, faire faire écrire un article de promotion en binôme.

(photo ici du site: <https://www.cntraveller.com/gallery/hotels-at-the-forefront-of-sustainability>)

3c- Americans Say They Want Eco-Friendly Vacations. But Few Make It a Priority

<https://time.com/6289080/climate-friendly-vacations-survey-summer-2023/>

travail sur les graphes: write the articles you think matches the graphes

puis comparaison avec article initial → quelle sont les info bien utilisées, celles non exploitées

travail de définition des mots soulignés (doc ci-dessous)

### 4- Going extreme

4a- How Space Tourism Will Change the World, *Brooke Nelson*, Reader's Digest, Rd.com, Jun. 05, 2023

4b- How underwater and deep-sea tourism became so popular, *Ulrike Lemmin-Woolfrey*, BBC.com/ travel, 20th June 2023

diviser la classe en 4: donner le texte sur space tourism avec une question négative à un groupe, le texte avec space tourism avec une question positive à un autre groupe, le texte sur deep diving tourism avec la question négative à un 3ème groupe, et le texte avec une question positive au dernier.

Ne pas leur dire qu'ils ont des questions différentes, juste des textes différents.

Laisser les binômes s'approprier le texte en répondant à la question. Sur une feuille, lister les arguments de réponses. Leur demander de conclure avec une question de leur choix, portant sur going extreme (la question doit pouvoir concerner tout type de vacances de l'extrême et ils doivent pouvoir y répondre)

Les mettre ensuite en quatuor, redistribuer les questions et les laisser débattre autour.

Retour sur les questions: en quoi elles influence

## 5- Smart tourims

The Future Of The Tourism Industry Is SMART, Dr Hayley Stainton (vidéo):

<https://www.youtube.com/watch?v=62QXYnQVJQA>

vidéo découpée : <https://www.veed.io/view/8cf4cffe-5411-4f0d-a070-70d5b1f1ea24?panel=share>  
travail de repérage en CO – mind map autour de plusieurs mots clés, restitution en français.

Smart holidays = le fait de rendre les vacances plus fluides, plus modernes, plus sustainable et de contrôler les flux.

Imaginer ce qu'en dirait Sheldrake (texte 1C): rédaction notée, ramassée ou juste corrigée

idée DST:

progrès automobile

Sujet :								
	Qualité du contenu	Pt score	Expression orale en continu	Pt score	Correction de la langue orale	Pt score	Richesse de la langue	Pt score
C2	j'ai rendu de <b> fines nuances</b> de sens en rapport avec le sujet	<b>30</b>	j'ai rendu de <b> fines nuances</b> de sens en rapport avec le sujet	<b>30</b>	J'ai <b>utilisé</b> avec une bonne maîtrise <b> tout l'éventail des traits phonologiques de la langue cible</b> , de façon à être toujours intelligible	<b>30</b>	J'ai employé de manière pertinente un <b>vaste répertoire lexical</b> incluant des expressions idiomatiques, des <b> nuances de formulation</b> et des structures variées	<b>30</b>
C1+		<b>25</b>		<b>25</b>		<b>25</b>		<b>25</b>
C1	J'ai traité le sujet et produit un oral <b> fluide et convaincant, étayé</b> par des éléments (inter)culturels pertinents, et pas simplement des éléments du cours.	<b>20</b>	j'ai développé <b> une argumentation complexe</b> , fondée sur des aspects (inter)culturels, <b> de manière synthétique et fluide</b> tout en m'assurant de sa bonne réception..Mon, voyage était très développé.	<b>20</b>	J'ai <b>utilisé</b> avec une assez bonne maîtrise <b> tout l'éventail des traits phonologiques de la langue cible</b> , de façon à être toujours intelligible. Les rares erreurs de langue ne donnent pas lieu à des malentendus.	<b>20</b>	J'ai employé de manière pertinente un <b>vaste répertoire lexical</b> incluant des expressions idiomatiques, des <b> nuances de formulation</b> et des structures variées.	<b>20</b>
C1-		<b>15</b>		<b>15</b>		<b>15</b>		<b>15</b>
B2+	Ma présentation était étayée, en m'appuyant sur des éléments tel que vu en cours J'ai parlé environ 5 minutes	<b>12</b>		<b>12</b>		<b>12</b>		<b>12</b>
B2	J'ai traité le sujet de façon <b> claire, détaillée et globalement efficace</b> , J'ai exploité plusieurs aspects	<b>10</b>	<b> J'ai développé un point de vue pertinent et étayé, y compris par des reformulations qui ne rompent pas le fil du discours.</b>	<b>10</b>	<b> Mon accent subit</b> l'influence d'autres langues mais <b> n'entrave pas l'intelligibilité.</b> Mes erreurs de langue ne donnent pas lieu à malentendu.	<b>10</b>	J'ai produit un discours et des énoncés assez fluides, l'étendue de min lexicque <b> est suffisante pour permettre précision et variété des formulations.</b>	<b>10</b>
B2-		<b>8</b>		<b>8</b>		<b>8</b>		<b>8</b>
B1+	Ma présentation était convaincante, étayée et en lien avec la notion. J'ai bien répondu eux exigences demandées.	<b>6</b>	J'ai parlé pendant plus de 2 minutes 30, en utilisant mes notes en soutien et non en support. J'ai parlé avec conviction, mon voyage	<b>6</b>		<b>6</b>		<b>6</b>

			était pertinent.					
<b>B1</b>	<b>Mon discours était structuré, j'ai utilisé des éléments du cours.</b> J'ai essayé de développer au moins une facette des vacances, j'ai cherché à approfondir la facette de voyage imposée.	<b>5</b>	j'ai <b>exposé un point de vue de manière simple</b> , j'ai beaucoup utilisé mes notes mais sans les lire de façon continue. J'ai parlé pendant environ deux minutes	<b>5</b>	Je m'exprime de <b>manière intelligible</b> malgré l'influence d'autres langues. J'ai une bonne <b>maîtrise des structures simples.</b>	<b>5</b>	J'ai produit un discours et des énoncés dont <b>l'étendue lexicale relative nécessite l'usage de périphrases et répétitions.</b>	<b>5</b>
<b>B1-/A2+</b>		<b>4</b>		<b>4</b>		<b>4</b>		<b>4</b>
<b>A2</b>	<b>Mon discours était bref et les éléments en sont juxtaposés.. J'ai peu utilisé les éléments du cours.</b> J'ai parlé moins de deux minutes	<b>3</b>	j'ai <b>exprimé un avis en termes simples.</b> J'ai parlé pendant moins de deux minutes. J'ai lu mes notes	<b>3</b>	Je m'exprime de <b>manière suffisamment claire</b> pour être compris, <b>mais la compréhension requiert un effort de mes interlocuteurs.</b>	<b>3</b>	J'ai produit un discours et des énoncés dont les mots sont adaptés à l'intention de communication, en dépit d'un <b>répertoire lexical limité.</b>	<b>3</b>
<b>A1</b>	<b>j'ai exprimé un avis en termes très simples.</b>	<b>1</b>	Mes énoncés sont ponctués de pauses, d'hésitations <b>et de faux démarrages.</b>	<b>1</b>	J'ai <b>utilisé un répertoire très limité</b> d'expressions et de mots mémorisés de façon compréhensible.	<b>1</b>	J'ai produit des énoncés intelligibles malgré un <b>lexique très limité.</b>	<b>1</b>

### A history of holidays, part 1: Early Holidays

In the Middle Ages, wealthy people went on pilgrimages for religious reasons. However pilgrimages were not really holidays – or they were not meant to be! In the 14th century, Chaucer wrote the Canterbury Tales about a group of pilgrims on their way to Canterbury. In England, people went on pilgrimages to shrines in places like Winchester. Sometimes people went on pilgrimages abroad to places like Rome or Jerusalem.

Pilgrimages in England ended during the reign of Henry VIII when shrines like those of St Thomas A Becket were destroyed.

However, in the Middle Ages, there were no holidays in the modern sense. People traveled for work, for war, or for religious reasons.

However, even for Medieval peasants life was not all hard work. People were allowed to rest on Holy days (from which we get our word holiday). During them, poor people danced and played a very rough form of football. The men from 2 villages played on a 'pitch', which could include woods and streams!

In the late Middle Ages, people in England began dancing around a Maypole. (Although they did not tie ribbons to the pole. That was invented in the 19th century). In 1644 during the Civil War in England, the Puritans banned the Maypole as they believed it had pagan origins. However, after the Restoration in 1660 Maypoles became common again.

In Tudor England the whole 12 days of Christmas were celebrated, (25th December – 6th January) but not every day was celebrated equally. All work stopped except looking after animals, spinning was even banned as this was the most common occupation for women, and flowers were placed around the spinning wheels. People would visit friends and it was seen as very much a community celebration. Work re-started on Plough Monday the first Monday after 12th night.

In the late 16th century and in the 17th century it became common for wealthy young men to travel abroad on a grand tour of Europe to finish their education. A grand tour would last years and would take in the most famous places in Europe.

From the mid-17th century, stagecoaches began running between towns in England, and in the 18th century, the building of turnpike roads (which were of high quality) made travel easier.

In the 18th century, rich people visited spas. They believed that bathing in and/or drinking spa water could cure illness. Towns like Buxton, Bath, and Tunbridge Wells prospered.

In Tunbridge Wells in the late 17th century lodging houses were built near the springs, so were coffee houses where you could drink coffee. So were bowling greens and shops. Members of the royal family visited Tunbridge, which boosted its reputation.

In the 17th century, people also visited Bath and in the 18th century, it boomed. Many new houses were built. During the Summer 18th century Bath was full of rich visitors. They played cards, went to balls and horse racing, went walking and horse riding.

At the end of the 18th century, wealthy people began to spend time at the seaside. (Again they believed that bathing in seawater was good for your health). Seaside resorts like Brighton, Worthing, Margate, and Eastbourne boomed. A man named Richard Hotham deliberately created a new seaside resort at Bognor.

In the 19th century, other seaside resorts grew up at Blackpool, Southport, and Bournemouth. Brighton also flourished and by 1848 250,000 people were visiting the resort every year.

In the 18th century, it was still common for rich young men to go on a grand tour of Europe, which would last for years.

There were inns in the Ancient World and in the Middle Ages but in 1768 a new building in Exeter was the first establishment in England to have a French name – The Hotel.

### **A history of holidays, part 2 : Modern Holidays**

However, until the late 19th century going away on holiday was only for the wealthy. Then in 1871, the Bank Holiday Act gave workers a few paid holidays each year. Also in the 1870s some clerks and skilled workers began to have a week's paid annual holiday. However, even at the end of the 19th century, most people had no paid holidays except bank holidays.

In the early 19th century everyone had Sunday off. In the 1870s some skilled workers began to have Saturday afternoons off. In the 1890s most workers gained a half-day holiday on Saturday and the weekend was born.

In the late 19th century when some skilled workers began to have paid holidays they often went to stay at the seaside. As a result, seaside towns like Blackpool, Bognor Regis, and Morecambe boomed.

Meanwhile, The first pleasure pier was built at Brighton in 1823 and soon they appeared at seaside resorts across Britain. In many seaside towns, promenades were also built. In the late 19th century the modern seaside holiday began with seaside rock, piers, donkey rides, and Punch and Judy shows. Then in 1895 an American called Charles Fey invented the one-armed bandit.

Meanwhile, in the 1840s, the spread of railways made travel much faster and more comfortable for the rich. They also made travel much cheaper and they made days out possible for ordinary people for the first time. Meanwhile at sea steamships made foreign travel easier. By 1815 steamships were sailing across the English Channel.

Bournemouth was founded in 1836. The railway reached Bournemouth in 1870, which made it far easier to reach, and increased the number of visitors. The town grew at a phenomenal rate. In 1861 the

population of Bournemouth was only 1,707. By 1881 the population of Bournemouth stood at 16,859.

In the 1840s Thomas Cook began arranging excursions by train in Britain. When the Great Exhibition opened in London in 1851 Cook arranged tours from other cities. The tours proved very popular. In the 1860s Cook arranged package tours abroad.

However, in the 19th century, foreign holidays were still only for the wealthy. In the 19th century guide books were published about cities and countries for those who could afford to travel abroad. In 1835 the poet William Wordsworth wrote a Guide to the Lakes. Railways meant more and more visitors went to the Lake District in the 19th century.

Poor people could not afford to take time off work for holidays but they could have working holidays. Many people from the East End of London went hop picking in Kent during the season. Many people could not afford a week's holiday by the seaside but could only afford a day out.

The first holiday camp in Britain opened in 1906. Holiday camps reached their heyday in the 1950s and early 1960s. However, they declined once foreign holidays became common.

In 1939 a new law in Britain said that everyone must have one week's annual paid holiday. By the 1950s two weeks were common and by the 1980s most people had at least 4 weeks of annual holiday.

New Years Day was made a bank holiday in Britain in 1974. In Britain the first Monday in May was made a bank holiday in 1978.

Meanwhile, a completely new form of transport began. In 1919 planes began carrying passengers between London and Paris. The first plane flight in Britain was made in 1908. The first passenger jet service began in 1952.

However, in the early 20th century flight was a luxury few people could afford. Furthermore, only a small minority could afford foreign travel. However, as air travel became cheaper foreign holidays became possible for more and more people. Still, foreign holidays only really became common in the 1960s and 1970s. In the 1980s long-distance holidays to other continents became common.

In the 1960s camping holidays became common. So did caravan holidays as more and more people could afford a car. In the 1960s and 1970s, skiing holidays became popular. Meanwhile, the traditional seaside holiday declined in popularity.

The Channel Tunnel opened in 1994 making it possible to travel from Britain to Europe by car or train.

Holidays in the future will often be taken in space. In 2001 Dennis Tito became the first space tourist when he spent a short time in the International Space Station. At the moment holidays in space are hugely expensive but they will inevitably become cheaper in the future. Holidays on the Moon will eventually become common.

Tim Lambert, *Last revised 2023, localhistories.org*

## **A history of holidays, part 2 : Modern Holidays**

However, until the late 19th century going away on holiday was only for the wealthy. Then in 1871, the Bank Holiday Act gave workers a few paid holidays each year. Also in the 1870s some clerks and skilled workers began to have a week's paid annual holiday. However, even at the end of the 19th century, most people had no paid holidays except bank holidays.

In the early 19th century everyone had Sunday off. In the 1870s some skilled workers began to have Saturday afternoons off. In the 1890s most workers gained a half-day holiday on Saturday and the weekend was born.

In the late 19th century when some skilled workers began to have paid holidays they often went to stay at the seaside. As a result, seaside towns like Blackpool, Bognor Regis, and Morecambe boomed. The

first pleasure pier. was built at Brighton in 1823 and soon they appeared at seaside resorts across Britain. In many seaside towns, promenades were also built. In the late 19th century the modern seaside holiday began with seaside rock, piers, donkey rides, and Punch and Judy shows. Then in 1895 an American called Charles Fey invented the one-armed bandit.

Meanwhile, in the 1840s, the spread of railways made travel much faster and more comfortable for the rich. They also made travel much cheaper and they made days out possible for ordinary people for the first time. Meanwhile at sea steamships made foreign travel easier. By 1815 steamships were sailing across the English Channel. Bournemouth was founded in 1836. The railway reached Bournemouth in 1870, which made it far easier to reach, and increased the number of visitors. The town grew at a phenomenal rate. In 1861 the population of Bournemouth was only 1,707. By 1881 the population of Bournemouth stood at 16,859.

In the 1840s Thomas Cook began arranging excursions by train in Britain. When the Great Exhibition opened in London in 1851 Cook arranged tours from other cities. The tours proved very popular. In the 1860s Cook arranged package tours abroad.

However, in the 19th century, foreign holidays were still only for the wealthy. In the 19th century guide books were published about cities and countries for those who could afford to travel abroad. In 1835 the poet William Wordsworth wrote a Guide to the Lakes. Railways meant more and more visitors went to the Lake District in the 19th century. Poor people could not afford to take time off work for holidays but they could have working holidays. Many people from the East End of London went hop picking in Kent during the season. Many people could not afford a week's holiday by the seaside but could only afford a day out.

The first holiday camp in Britain opened in 1906. Holiday camps reached their heyday in the 1950s and early 1960s. However, they declined once foreign holidays became common. In 1939 a new law in Britain said that everyone must have one week's annual paid holiday. By the 1950s two weeks were common and by the 1980s most people had at least 4 weeks of annual holiday. New Years Day was made a bank holiday in Britain in 1974. In Britain the first Monday in May was made a bank holiday in 1978.

Meanwhile, a completely new form of transport began. In 1919 planes began carrying passengers between London and Paris. The first plane flight in Britain was made in 1908. The first passenger jet service began in 1952. However, in the early 20th century flight was a luxury few people could afford. Furthermore, only a small minority could afford foreign travel. However, as air travel became cheaper foreign holidays became possible for more and more people. Still, foreign holidays only really became common in the 1960s and 1970s. In the 1980s long-distance holidays to other continents became common.

In the 1960s camping holidays became common. So did caravan holidays as more and more people could afford a car. In the 1960s and 1970s, skiing holidays became popular. Meanwhile, the traditional seaside holiday declined in popularity.

The Channel Tunnel opened in 1994 making it possible to travel from Britain to Europe by car or train.

Holidays in the future will often be taken in space. In 2001 Dennis Tito became the first space tourist when he spent a short time in the International Space Station. At the moment holidays in space are hugely expensive but they will inevitably become cheaper in the future. Holidays on the Moon will eventually become common.

Tim Lambert, *Last revised 2023, localhistories.org*

### **3a- 50% of tourists want sustainable holidays despite higher costs: Booking.com**

**Booking.com told Euronews that many people want to lower their carbon footprints when travelling, even if it means paying more.**

As many as 50% of travellers say they do not mind paying more to have a more sustainable holiday, according to one of the world's largest online travel agencies.

Danielle D'Silva, the Head of Sustainability at Booking.com said on Tuesday that people are coming around to the thinking that environmentally conscious travelling is a good thing. "We know that there are some barriers they're facing. So, while they have intent, there's also something getting in their way and that's the costs, or the perception of costs that is. Do they feel that sustainable options are too expensive and it's also the idea that there is too few options for them to choose from," she told Euronews. "So, we have 50% of our travellers telling us that the sustainable options are too expensive. Interestingly there is also 50% of our travellers that are telling us that they're willing to pay more for a sustainably certified experience or accommodation."

A Booking.com survey found that tourists want to travel in a more sustainable way. In 2023, three-quarters of respondents said they want to go on holiday with a lower carbon footprint, but they encounter obstacles in this process.

And the Destination Europe summit in the Belgian capital, where D'Silva was speaking, discussed exactly this. The aim was for professionals in the sector and politicians to discuss the challenges for an industry still trying to recover from the pandemic and soaring inflation. Eduardo Santander, the executive director of the European Travel Commission echoed the same comments as D'Silva that there is a growing demand from travellers of sustainable tourism.

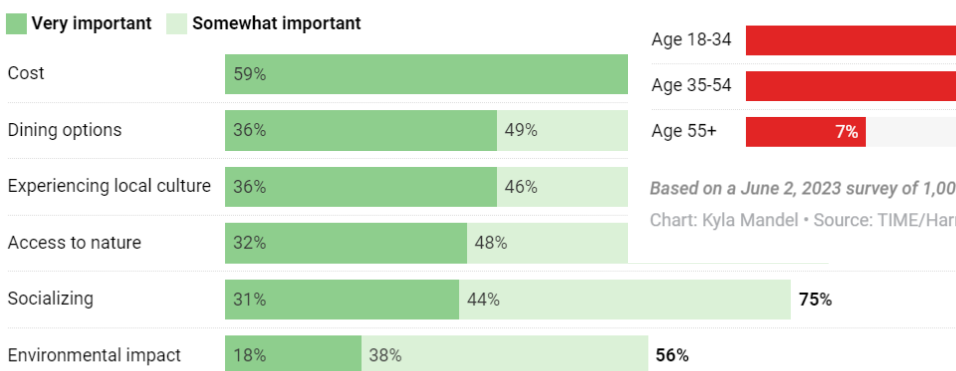
"People are looking for real experiences and we see that tourism is changing in a way that's becoming almost a social need. People need a holiday to escape from their life and so on," Santander told Euronews. "But we also want people to understand that tourism comes with a responsibility towards local communities, entrepreneurs, but also towards yourself that you want to do something which is not only good for yourself but also good for the environment, for society and for people around you".

Gregoire Lory, Euronews, 28/06/2023

### 3c- Americans Say They Want Eco-Friendly Vacations. But Few Make It a Priority-

#### The most important factors for Americans vacations

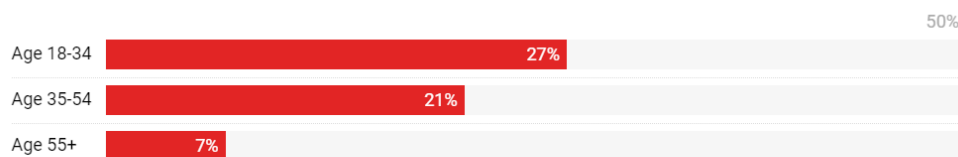
percentage of survey respondents who said the following were could choose more than one option)



Based on a June 2, 2023 survey of 1,009 Americans  
Chart: Kyla Mandel & Elijah Wolfson for TIME • Source: TIME/Harris Poll

#### Number of Americans who say they would spend more for climate-friendly travel

percentage of survey respondents, by age, who would pay more for lower-impact travel options (ex. EV car rental, offsets, sustainable fuel charge)



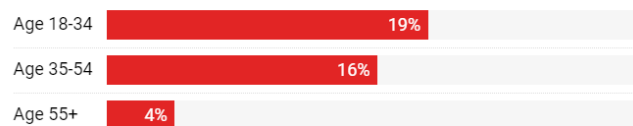
Based on a June 2, 2023 survey of 1,009 Americans  
Chart: Kyla Mandel • Source: TIME/Harris Poll

TIME

TIME

### How many people have changed their travel friendly

percentage of U.S. survey respondents, by age, that said they had changed their vacation

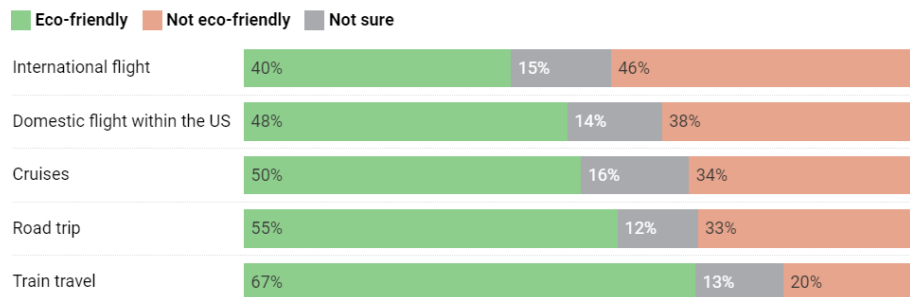


Based on a June 2, 2023 survey of 1,009 Americans

Chart: Kyla Mandel • Source: TIME/Harris Poll

### Americans' beliefs on the climate impact of different types of vacations

percentage of survey respondents who believe that the following vacation options are...



Based on a June 2, 2023 survey of 1,009 Americans

Chart: Kyla Mandel & Elijah Wolfson for TIME • Source: TIME/Harris Poll

TIME

### 3c- Americans Say They Want Eco-Friendly Vacations. But Few Make It a Priority

The start of summer travel season is underway, and Americans are crowding into airports, interstates, and cruise terminals, family in tow, to get away from it all for a week or two. A lot of them will be thinking about sustainability: the carbon emissions entailed by this yearly mass exodus, and the whether the ice in Glacier National Park is going to be around for much longer, or if there'll be any unbleached coral to see on snorkeling outings a few years down the line. It's just that not a lot of them are going to change their plans because of it. Those were some of the findings of a recent survey conducted by The Harris Poll on behalf of TIME. Just over half (56%) of the more than 1,000 respondents said that their vacations' environmental impact was at least somewhat important to them. It wasn't exactly the biggest concern among vacationers—92% said that cost was "somewhat important" or "very important," 85% placed importance on dining options, and 75% would prioritize prospects for socializing. Still, if most people are thinking about the environment when they plan their trips, it seems like that would make a difference in the carbon footprint of this summer's travel season.

**The catch is** that just because people thought the environment was important, doesn't mean they plan to do anything about it. Only 17% of respondents said they'd spend more money to make their trips more environmentally friendly, by switching to an airline with more investments in decarbonized aviation fuel, for instance, or by renting an EV instead of a gasoline car. Even fewer, 12%, have ever actually changed their plans for the sake of the planet, such as taking a train instead of flying, for instance, or visiting somewhere closer to home. In both cases, younger generations are much more likely to do so than people over the age of 55.

That's the reason why many environmentalists tend to focus on getting regulations on businesses passed in government, or pressuring them through shareholder activism, rather than simply trying to get companies to offer more sustainable options and hoping consumers will pick them out. Unless whatever new product they're selling is cheaper or better than what's already out there, very few people are going to buy it. Often, people don't even have a good idea of what products are actually sustainable, or what sustainability even means. From Arkalgud's past research, he estimates that only a tiny fraction of consumers, around 1%, actually share a common understanding of the term "sustainability." "We haven't even checked if people understand what this thing is, yet we're trying to sell them something," he says. "And we really blame the consumer?" That lines up with the results of TIME's **survey**. For example, taking a cruise to a destination releases far more greenhouse gas

emissions per person than simply flying there and staying in a hotel. Yet, when asked about environmentally responsible modes of travel, respondents were actually more likely to rank cruising as being climate-friendly compared to flying.

Those numbers are **sobering** for anyone hoping that a wave of customer demand is going to force airlines and cruise companies to cut their emissions. Worse still, they're almost certainly an overestimate. Ujwal Arkalgud, who studies consumer decision-making at Lux Research, has done a lot of studies asking consumers if they'll pay more for more environmentally-friendly products, then following up on what they actually do in the real world. The results aren't pretty. "If 20% of a cohort says I'm willing to pay more, the reality is about half that [does it]," says Arkalgud. "We have an idealized self, but when the rubber hits the road and we actually have to make the purchasing decision, it's usually a very disappointing outcome."

The situation is a bit like the U.S. market for cigarettes, says Arkalgud. Doctors have known that cigarettes are bad for you for decades, but it took years for it to really **sink in** for the public. Only then, in the course of many decades, did people begin avoiding tobacco on their own. The same may happen one day for vacationers and other consumers, with people choosing to travel more sustainably even if there's an extra cost, or it means not visiting their ideal destination. It's just that we don't have decades to wait.

Alejandro de la Garza, Time.com, *June 22, 2023* Time.com

#### **4- GOING EXTREME: Do you think there is anything to expect from Space Tourism?**

#### **4- GOING EXTREME: What progress can we expect of Space tourism?**

##### **TEXTE a: How Space Tourism Will Change the World**

We're not too far away from a future where anyone can travel to outer space. In fact, some space tourism companies will allow you to experience that final frontier right now—for a cost. With the rapid growth of space tourism, traveling to outer space could soon be as easy as booking a flight to Europe. Experts even say that in just a matter of years, this industry could change the world. "When aviation started [in the mid-1900s] it was for governments and those who could afford it," says Jane Poynter, founder and co-CEO of space tourism company Space Perspective. "People then could not imagine the myriad ways air travel would be used to positively impact billions of people's lives." The same can be said for the future of space tourism.

Here's everything you need to know about how space tourism works, the pros and cons of space travel, and what is expected to come for the space tourism industry.

##### **What is space travel?**

**Space travel** is defined as any air travel beyond 50 or 60 miles above sea level.(...) When booking space tours, companies offer either orbital or suborbital flights:

- **Orbital space travel** means the spacecraft is traveling around the planet with enough speed to avoid falling back to Earth. The International Space Station (ISS) is an example of orbital space travel.
- **Suborbital space travel** takes people into space and then returns to Earth at a slower speed than orbital travel. Most space tourism companies for private citizens currently offer suborbital spaceflights.

##### **Why do people want to go to space?**

There is one universal reason often cited by people who want to go to space. "Seeing the iconic thin blue line of our planet's atmosphere against the stark blackness of space affects [astronauts] deeply,"

Poynter says. Just imagine [all the things you can see from space](#), including capturing incredible pictures of city lights from above.

“Astronauts describe it as personally transformational and say that when they return, they are compelled to get more involved in social and environmental causes. (...) Imagine thousands of people having that experience. It will have a ripple effect across society.”

### **Space tourism companies**

Russia’s Soyuz spacecraft has been ferrying private citizens to the ISS since 2001, at a reported cost of \$90 million for a seat. Now, thanks to newly emerging U.S. space tourism companies, it will soon be possible to join the exclusive club of those who have traveled to space—that is, for anyone who can afford the still very steep ticket price.

**SpaceX**, founded by Elon Musk, made news when it carried two NASA astronauts to the ISS in 2020, as it was the first crewed mission to launch in the United States in nearly 10 years. SpaceX currently charters private orbital flights to the International Space Station in its Dragon spacecraft. It costs tens of millions of dollars for a seat on a flight.

**Blue Origin**, founded by Amazon’s Jeff Bezos, is the only space tourism company operating commercial suborbital flights. Blue Origin charged \$28 million for a ticket on its first flight with Jeff Bezos, but it does not advertise its current ticket prices.

**Virgin Galactic** is planning to start commercial operations next year. Reservations for Richard Branson’s Virgin Galactic flights start at \$450,000.

For those seeking a less expensive—albeit still very pricey—option, other companies offer zero-pressure balloons that will take tourists to an altitude of up to 20 miles, which is high enough to see the curvature of the Earth. Rides on Space Perspective’s balloon, called Spaceship Neptune, cost \$125,000 per seat. World View charges \$50,000 per seat. Flights are scheduled to launch in 2024, but has not been approved by the FAA yet.

If you’re not ready to blast through the Earth’s upper atmosphere, you can still experience space travel with less risk. Companies like Zero G recreate the feeling of zero gravity on specially modified Boeing 727 flights. These experiences are also easier on the wallet, going for around \$8,200.

### **How to prep for a space flight**

Taking a flight into space will require some training, but the programs are less rigorous than those faced by real astronauts. To prep for Virgin Galactic’s three-hour trips, for example, tourists will be required to attend a multi-day training program with pilot briefings and spacesuit fittings. Trips on zero-pressure balloons will require a simple informational and safety course.

### **Pros and cons of space tourism**

Among space enthusiasts and experts alike, space tourism opinions are varied.

#### **Pros:**

**Job creation.** Commercial space tourism has the potential to boost the economy by creating jobs and encouraging investment.

**Advances in research.** Spending more time in space could help solve some of the [most baffling mysteries about the universe](#).

**Opportunity to experience space.** “At Space Perspective, we want to enable more people than ever before to go to space to gaze into the unknown and imagine what could be, and to look down at Earth and gain a new perspective on home,” Poynter says.

#### **Cons:**

**It’s expensive.** Many people point out that the hefty price tag is one major downside to today’s space travel. At hundreds of thousands of dollars per ticket, only the wealthiest travelers can afford a seat on a future spaceflight.

---

**It may be bad for the environment.** Scientists also worry that space travel could damage the planet and contribute to climate change. (...) However, Poynter argues that not all space travel is environmentally harmful. She notes that Space Perspective's Spaceship Neptune is the only zero-emissions, carbon-neutral spacecraft, and Space Perspective is a carbon-neutral company.

### **The future of space tourism**

When it comes to the future of space tourism, the sky's the limit—literally. “We are at the very beginning of space travel,” Poynter says. “We simply cannot imagine now the ways people will use spaceflight to improve life right here on Earth, close to home at first and increasingly farther out into our solar system.”

Experts predict that travelers might want to stay and live in space, and many companies have launched plans to build properties and accommodations for space tourists to spend the night. Some of these space hotels will even have offices and research spaces for rent, opening up the possibility of working from space as well.

What's more, space tourism programs can also encourage further innovation and exploration of our solar system and beyond. Taking more people into space creates opportunities to invent new space technology, conduct groundbreaking research and establish new frontiers in galaxies beyond our own.

*Brooke Nelson, Reader's Digest, Rd.com, Jun. 05, 2023*

---

### **4- GOING EXTREME: Considering the dangers it represent, do you think deep-sea tourism is worth developping?**

### **4- GOING EXTREME: To what extend is deep-sea tourism an interesting to develop?**

### **TEXTE b :How underwater and deep-sea tourism became so popular**

**In recent years, a wave of underwater "bucket-list" experiences has sought to bring travellers in close contact with the ocean's depths.**

---

More than 70% of our planet is covered by water, and in an age when so much on land has been explored and explained, a recent wave of underwater tourism is allowing travellers to venture deep into one of the Earth's last uncharted depths: the ocean.

A series of high-profile openings – such as the world's first underwater hotel, the Conrad Maldives Rangali Island; the world's largest underwater restaurant Under in Norway – have been increasingly luring wealthy travellers to explore new worlds under the ocean's surface, even if they lack the specialist training. But as rescuers race against time to recover the tourist submersible that went missing during a dive to the Titanic's wreck, it may be time to rethink the limits of some of these bucket-list experiences.

Underwater tourism is hardly a new concept. Jacques Cousteau invented general-use scuba gear in 1942, and the Professional Association of Diving Instructors, PADI, has issued 27 million diver certifications globally since 1967. (...) More recently, however, a shift in thinking has brought scuba-like adventure to people who are not skilled divers or swimmers or don't have the time or means to earn diving certification. Experiences such as Seawalker on Green Island in the Great Barrier Reef allow people to submerge while wearing a large glass helmet. Dressed in a protective suit, "divers" are gently lowered to the ocean floor, where they quite literally walk upright on the sand, connected by tubes that allow them to breathe normally while underwater.

---

Then there are submersible rides, which offer tours along reefs of some of the world's most interesting islands and coastal regions, from Hawaii to Mauritius. These can range from larger submarines for groups of tourists to super-luxurious private subs, such as the ones by Deepflight that operate in the Four Seasons Resort in the Maldives. These environmentally friendly and air-conditioned crafts, with space for two people plus a pilot, have individual viewing domes that allow for an exclusive up-and-close experience.

Although many believe these sleek submersibles may be the future of underwater exploration, since no scuba or swimming experience is necessary – plus the battery-operated and low-noise-level submersibles mean the experience is as sustainable as possible – they often carry a high price tag. The Deepflight, for example, costs \$1,500 per couple for an hour's excursion. Lovers Deep, a luxury submarine hotel that glides through the reefs around St Lucia – complete with its own private chef and butler – starts at \$150,000 a night.

And then there's OceanGate, the deep-sea exploration tour company whose 23,000lb submersible, Titan, is currently at the centre of an international search operation. When the BBC spoke to the company's CEO, Stockton Rush, in autumn 2022 ahead of one of its maiden voyages to the Titanic wreck site, he said that his goal was to make deep-sea exploration commercially viable for the masses, while positioning the Titanic as a "must-do dive". But with tickets costing \$250,000 for a chance to witness the world's most famous shipwreck up close, the experience has been far out of reach for most travellers.

"While underwater tourism invokes evocative images of deep-sea fantasies, these experiences are in reality few and far between," said Dr Hayley Stainton, UK-based tourism academic and author at Tourism Teacher. "They are also very expensive. I do think that there is a market for underwater tourism. I just believe that it will be limited to the wealthy and the few."

Patricia Rodiles Martinez, Institutional Development & PR Manager of Les Roches, who held the first Space and Underwater Tourism Universal Summit in 2019, holds another view. "As demand increases over time, the costs associated will also come down, making it more and more accessible for all. This is what happened with the first airplanes, cruises and hotels."

---

Whether or not submersible rides will become mainstream, many of these innovative underwater experiences have an important secondary benefit: they're educating a new audience on the need to care for the ocean, which is struggling with threats such as coral bleaching due to global warming, over-fishing and pollution. (...) [Some] underwater projects are working hand in hand with conservationists and marine biologists to make the travel experience not only fun but educational, by raising awareness of the threat to the oceans and its habitats. While dive centres highlight the threats to their dive grounds, research centres, in particular on the Great Barrier Reef, are showcasing their research on topics such as coral bleaching, the effects of plastic waste and reef destruction. They're asking visitors to take away not only an enjoyable experience but vital knowledge, too.

Citizen science initiatives, from mapping seaweed species on the Washington State coast to tracking sharks and turtles on the Great Barrier Reef allow travellers and volunteers to help monitor the marine environment and potential tourism impacts, and provide critical data for research. They also have the side benefit of spreading the responsibility of protecting our underwater world to the entire community. (...)

In many ways, the idea behind underwater tourism is the same as expeditions to the Arctic, Amazon or other far-flung and environmentally fragile ecosystems: by visiting these hard-to-reach places, travellers may grasp the power and precariousness of our rapidly changing planet. But with so many historical, natural and artistic attractions under the seas, it is up to local governments and tour operators to ensure the sites are safely managed in an environmentally friendly and beneficial manner. The danger is that a site becomes too attractive and crowds will destroy the natural habitat. Tour boats, walkways and excursions need to be monitored and forced to adhere to strict guidelines. Even aware scuba divers can inadvertently harm the very sites they have come to enjoy. Studies into sustainable tourism growth by groups such as by Unesco have shown the solution lies with educating

and empowering local governments and communities to oversee infrastructure developments, monitoring systems and creating strict local legislations.

Some projects are already in place, monitored internationally and designed to educate and bring local businesses on board. To protect the reefs through the education of scuba divers and snorkellers, for example, the Green Fins initiative has collated a number of internationally approved guidelines promoting a sustainable dive and snorkelling industry, which have been adopted by 11 countries and nearly 600 individual marine tourism companies in popular underwater tourism destinations such as Bali and Egypt since its inception in 2004.

"There are ways to develop underwater tourism in a sustainable manner that allows for positive impacts," Dr Stainton said. "For example, an aircraft that was submerged off the coast of Turkey has encouraged marine life to the area through the creation of an artificial reef. As underwater tourism becomes more innovative and grows in popularity, we have a chance to develop new experiences and attractions that educate travellers about the deep sea. But it's imperative that we do so while prioritising sustainability and safety.

Ulrike Lemmin-Woolfrey, [BBC.com/ travel](https://www.bbc.com/travel), 20th June 2023

EDITOR'S NOTE (20/06/23): This article was originally published in 2020, and updated to reflect the news about the disappearance of the Titanic submersible.

### **5a- AI can help you plan your next trip—if you know how to ask.**

With the introduction of accessible new AI systems like ChatGPT, travel will never be the same. AI has simplified planning, made it easier to discover new experiences, and streamlined the booking process. Instead of slogging through hours of research, users get similar results with a quick Here's what you need to know about how to best use AI for travel.

The best uses of AI for travel currently fall largely into the planning and purchasing phase. "All the excitement around booking a trip can quickly become overwhelming when travelers are faced with lots of options that each require research," says Rathi Murthy, the CTO of Expedia Group. "This is what AI can solve in travel."

One of the best uses of AI for travel is to coordinate multiple flights and suggest destinations based on certain parameters, including timing and pricing. For example, GPT-4 can find multiple flights for under \$1,500 for five people traveling from five different cities in the U.S. and traveling to Amsterdam in August. GPT can save a lot of research by coordinating budgets and itineraries and searching for the best deals on multiple platforms. You'll still need to go to booking sites to both book and verify the pricing, which is one reason experts recommend that travelers use AI as a rough outline or starting point—and not rely on it alone.

You can narrow your search once you choose where you want to travel. AI is skilled at responding to specific interests, whether you're looking for the best speakeasies in an area or designing a five-day itinerary of off-the-beaten-path museums, events, or tours. It can even suggest dining reservations or find out the price of ticketed events. AI is also useful in finding responses to prompts like "less crowded" or "underrated." This is because, unlike Yelp, TripAdvisor, or Google, the system pools knowledge from all corners of the web and interprets results to fit your query best—then delivers the information in a conversational way.

•

To create a good prompt, it's crucial to ask questions in your native language, according to Ross Borden from Matador Network, the company behind the travel AI chat called GuideGeek. AI models

can speak and understand many languages, and your grammar matters: The more accurate your punctuation, spelling, and grammar, the better the AI will be able to understand you. You will also need to be as specific as possible about what you want. Include information about your party (any kids, elderly travelers, or pets?), dietary restrictions, interests, and priorities. The more information you can give, the better your output will be. You can also get better results by giving AI feedback: telling it when it's wrong or misunderstands your request is important. AI uses large language models (LLMs) to learn, and that back-and-forth exchange can go a long way to getting you accurate and relevant information.

Finally, you'll need to double-check AI's answers against other sources.

### **Where does AI fall short?**

AI “can collect general information with 70 to 80% accuracy—that's still only a C grade,” says Erica Jackowitz, a luxury travel advisor with [Roman & Erica](#). The current iteration of AI is only as good as the data it's pulling in. That means that it won't be able to tell you if a hotel, restaurant, bar, or museum has closed, gone out of business, changed its name, or shifted focus. You'll also still need to go directly to booking sites to verify prices and book your travel. The base platform of Chat GPT also can't search the web at this point or give you live information. Matthias Keller, chief scientist & senior vice president of technology at [Kayak](#) noted that issues also arise if a city has changed names or is known under another name. For example, at Kayak, Bangalore is called Bengaluru, the city's official name since 2014.

AI can also “hallucinate” or make up false facts when asked about very small cities or towns in remote locations, according to Borden. “If you say, what's a great coffee shop in Shoshone, Idaho, you probably want to check the output because it tends to have, in my experience, more hallucinations in small towns when the AI doesn't have an answer,” he says. “It will just make one up, which is obviously not good for anyone.” (...)

Every day, AI is rapidly evolving as more start-ups and companies figure out the best ways to leverage this powerful generative engine to deliver information using natural language. As the system gets more access to the web, learns what users want, and becomes more “intelligent,” it will continue to shift travel in new, unexpected, and unique ways. Because the technology is still so new and changing so fast, it's difficult to say how it will affect travel long term, but according to Borden, “AI is the technology that's going to bring travel into this amazing renaissance with regard to how we plan, research and ultimately book travel. And then it will revolutionize what we do even as we travel.”

- *Abigail Bassed for national geography, June 5, 2023*

*idée DST:*

<https://www.cntraveller.com/gallery/hotels-at-the-forefront-of-sustainability>

<https://ecotourism-world.com/how-to-find-sustainable-hotels/>

- *articles sur les recherches d'ocean drive*

### **Greener air travel will depend on these emerging technologies**

*Electric engines, alternative fuels, and better navigation could reduce emissions—and mitigate the impacts of a global return to the skies.*

Here's a word you may have overlooked in 2020: *flygskam*, a Swedish term for the feeling of being ashamed to fly. In a year that saw a 66 percent decrease in flights, compared to 2019, you might think that flygskam has flown the coop.(...) The term originated in 2017 as part of a campaign to change how we fly, from the frequency of our flights to the technology of our aircraft. The goal: to

mitigate the carbon dioxide emissions that experts think may [triple by 2050](#).

Aviation accounts for a relatively small portion of global emissions—2.5 percent. While bigger culprits, such as electricity and agriculture, account for greater emissions, they also benefit billions of people. Airline emissions, in contrast, come mostly from rich travelers in the richest countries: business class passengers produce six times as much carbon as those in economy class, and one percent of the most frequent fliers are responsible for half of all aviation’s carbon emissions. (...) With climate change reaching a point of no return as early as 2035, action will need to happen quickly. Of course, flying less would have an even bigger impact, and there are calls for travelers to fly only once a year, give up flying for a year, and attend conferences virtually. Still, air travel is here to stay, so the cleaner the better. Here are some of the ways flying could clean up its act in the years to come.

Aviation emits more than carbon dioxide; it also produces water vapor, aerosols, and nitrogen oxides. These pollutants absorb more incoming energy than what is radiated back to space, causing Earth’s atmosphere to warm. This means aviation’s impact on warming might be an even bigger share than its carbon footprint. The worst of the non-carbon impacts are from contrails, short for condensation trails: the line-shaped clouds that form from a plane’s engine exhaust. A small number of flights are responsible for most contrails. This is because contrails form only in narrow atmospheric bands where the weather is cold and humid enough. Avoiding those zones could make a big difference in limiting aviation’s non-carbon pollution. One research paper modeling Japan’s airspace found that modifying a small number of flight routes to skip these areas could reduce contrails’ effects on the climate by 59 percent. The change would be as little as 2,000 feet above or below these regions. While flying a plane higher or lower can reduce its efficiency and require more jet fuel, the paper found that limiting contrails would still offset any additional carbon emissions.

“There is a growing realization that the impact of contrails is a really significant component of aviation’s climate impact,” says Marc Stettler, one of the paper’s authors and a lecturer on transport and the environment at Imperial College London. The spots where contrails can form change from day to day, so airlines need accurate, multi-day weather forecasts to avoid them. In the future, pilots could report contrails, much like they now do with turbulence, so other planes could adjust their flight paths. “This is the faster way that aviation can reduce its climate impact,” he says.

Commercial airplanes rely on kerosene-based propellant, but companies are experimenting with turning biomasses, such as vegetable oil and even used diapers, into jet fuels. Some research suggests these biofuels could cut carbon pollution from airplanes by upwards of 60 percent. But all biofuels are not created equal. Those that could be processed into food are unsustainable because of the planet’s growing population, which needs crops for calories. Used cooking oil and pulp leftover from agriculture or logging are expensive and not produced at a scale large enough to make a meaningful difference. But this doesn’t mean that other sustainable aviation fuels won’t be developed. “You hear that aviation is a hard sector to decarbonize,” says Andrew Murphy, the aviation director at Transport and Environment, a European nongovernmental organization. “That is only half the story. The other half is we haven’t tried.”

More-promising areas include e-fuels, or “synthetic fuels,” which don’t require engines to be reengineered. To make e-fuels, electricity—hopefully renewable—is used to split water into hydrogen and oxygen. The hydrogen is then combined with carbon dioxide to make jet fuel. KLM recently conducted its first flight powered by synthetic fuel.

Cars aren’t the only conveyance undergoing electric innovation: one count found a hundred electric-powered aircraft projects in the works. The first electric flights will be in small planes with a range limited to a few hundred miles. Norway, a country with numerous islands and mountainous terrain calling for puddle jumpers, has promised that all of its short-haul flights will be on electric aircraft by 2040. Underserved areas could one day get new routes flown exclusively by electric planes.... [Some] companies are exploring a hybrid of electricity and hydrogen, which could extend ranges. Boeing and others are also looking at hydrogen as a means of propulsion even without electrification. Airbus

recently revealed three different hydrogen planes with plans to have one or something like it in service by 2035.

“We don’t want to just make it technically feasible,” says Glenn Llewellyn, vice president of Airbus’s Zero-Emission Aircraft project. “We want to make it economically viable. (...) The ecosystem is evolving in a much different way than 10 years ago,” Llewellyn says. “We have a better starting point.”

Airlines have used computers to help optimize routing and planning for decades, but they’re now putting artificial intelligence (AI) to work in finding new ways to reduce jet fuel needs. Air France, Norwegian, and Malaysia Airlines are already using technology called Sky Breathe that relies on big data and AI to analyze billions of records from flights in an effort to find ways to save fuel. The company behind Sky Breathe says it has saved its customers more than \$150 million in 2019 and reduced CO2 emissions by 590,000 tons.

The U.S. Federal Aviation Administration (FAA) is midway through a multiyear upgrade called NextGen, which will be a series of interconnected systems to improve how air traffic control sees, navigates, and communicates. The FAA says the technology will make it possible to schedule tighter landings and takeoffs and decrease delays that leave planes sitting on the tarmac or circling the airport.

But for this to happen, more than technology has to evolve; countries will need to change legislation, and airlines will need to fund expensive research. It will take incentives to encourage the aviation industry to become sustainable. Janice Lao-Noche, an environmental scientist and development economist, says it’s going to take a lot of flygskam and maybe the pain of climate change disrupting more flights for all the innovations to take off.

“I don’t think it’s futile,” Lao-Noche says. “[But] this is going to be, no pun intended, a bumpy ride for the aviation industry.”

*Jackie Snow, National Geography, JANUARY 15, 2021*