



10 Grand Challenges We Will Face by 2050

A) Warm up

1. What are the main challenges that you believe the world is facing at the moment?
2. What is the current sentiment in your region regarding the future of the world?

B) Adapted Text - 10 Grand Challenges We Will Face by 2050

10 Grand Challenges We Will Face by 2050

Adapted from an article published in 2017 by BBC Future

What are the big challenges that the world will face in the future? In 30 years, what might be on the world's agenda to solve? It's impossible to predict, but here are just some of the potential big issues of tomorrow:

Genetic Modification of Humans

Debates among scientists have recently been **gaining momentum** over a new technology that lets us edit human DNA. It's called Crispr (pronounced 'crisper') and it's a means of **altering** people's DNA to take diseases like cancer out of the equation.

Sounds great, right? But what if this turns into some kind of project to produce "designer babies" only for the wealthy, selecting embryos that produce babies that will have a certain amount of intelligence or that have certain physical characteristics? This is an up-and-coming advancement which could have ethical **repercussions** and could further widen the gap between the haves and the have-nots.

An Ageing Population and Declining Birth Rates

People today are living longer than ever. In fact, the number of people over the age of 100 will increase more than 50 times – from 500,000 today to over 26 million by 2100. From the UK to Japan to China, societies with large numbers of people over 65 will become more common. In the next couple of decades, as that increase starts to happen, we may struggle to care for the elderly. This problem is further **exacerbated** by the fact that the birth rates in many developed countries are **plummeting**, especially in Europe and South East Asia. Policies to allow more immigrants to try and compensate for ageing workforces may have to be discussed in many developed countries.

Lost Cities and Climate Catastrophes

You don't need to look very hard in a place like Miami to see how cities are changing in the 21st Century – rising sea levels are gradually making some of them disappear. As a result of climate change, floods becoming more common in the streets, and city infrastructure is being forced to adapt. Aside from more seawalls, the city of Miami is

requiring all new buildings be built with their first floor built higher.

The last few years have been the hottest years on record by a huge margin, and some areas of the world will become uninhabitable over the next 30 years. The economic impact to many regions of the world will be **profound**, and climate refugees could become much more common.

The Evolution of Social Media

Social media has completely transformed the way we communicate over the past decade, and with it have come many challenges.

Firstly, a world with little privacy is one problem which we are already very used to, and many of us have come to accept. Cyberbullying is another issue which is difficult to police.

Then there's also the problem of our information diet to consider. How can we trust what we read on social media? Recent Twitter **rows** have highlighted some very important questions moving forward: How will we decide in the future who has a platform to express their views and who does not?

Social media does an excellent job at holding our attention. Scrolling through Instagram or TikTok is an activity which many struggle **to tear themselves away from**. Will this become more extreme, or will we find ways to regain our concentration?

New Geopolitical Tensions

The last 12 months have completely transformed global geopolitics across the world. Tensions **mounting** between the USA and China, as well as the war in Ukraine are changing the political landscape. When you add technology into the mix, several other challenges are likely to arise in the coming years: North Korean missile launches; hackers interfering in other nations' elections; increased competition over microchip technology, and battles over global resources.

Driverless Car Technology

Driverless car technology has suffered a turbulent few years with several accidents which may have **put the brakes on** automakers' enthusiasm for the technology. However, the overall number of cars on the road is still increasing. In countries like China that are seeing a growing middle class, the environmental and infrastructural needs that increasing traffic demands is going to be a grand challenge. How do we ensure safety, fight pollution, and make sure driverless cars aren't a danger on the road?

Dwindling Resources

The new tech and devices that characterise the 21st Century all require rare earth metals to make – an average smartphone has over 60 “ingredients”. That is putting a strain on the planet's natural resources: in China, where 90% of the world's rare earth metals are found, it's estimated that its mines will run out in the next two decades – and good substitutes for those materials are hard to find.

Becoming a Multiplanetary Species

How will space tourism companies make sure their activities are safe? How will we find ways to send humans to Mars or another planet to live there? Space travel might seem reserved only for space agencies and billionaires today, but as it becomes more accessible to everybody else, a whole range of new challenges will emerge.

Boosted Brainpower

It's already common to use drugs to boost brainpower (whether it's coffee, or something stronger, like modafinil), but **let's fast-forward** a few decades. Imagine pharmaceuticals that make us think faster than currently possible, and technological implants that help us concentrate beyond normal human ability for hours or days, for example – these advances are already well underway around the world. The question it raises is: what happens to those that cannot afford such products? Could it widen inequality? Then there's also the legal and ethical issues: it's acceptable to drink a coffee before you sit an exam, but is it ok to use an implant or a smart drug?

The Dominance of AI in our Lives

One of the most **intriguing** yet terrifying global developments is the idea that artificial intelligence will one day become more powerful than human intelligence, otherwise known as 'the singularity'.

The AI community will need to consider the ethical and societal implications of their work as AI comes to shape more areas of our life, from healthcare to financial markets.

The original article from 2018 can be found below:

<https://www.bbc.com/future/article/20170713-what-will-the-challenges-of-2050-be>

C) Key Words from Context

Based on the context of the article, can you match the words in the box to the definitions listed below? Then add the word into the example sentence. You may need to change the form of the word to fit the meaning of the sentence.

To gain momentum	intriguing	To fast forward to	Profound
To plummet	To mount	to dwindle	repercussions
To exacerbate	to tear yourself away from	to put the brakes on	row

1. To leave somewhere even though you want to stay, or to stop yourself from doing something even though you want to continue to do it: _____

"I was not able to _____ my social media feed."

2. To increase gradually or to get bigger. This is often used when negative things increase, but not always: _____

"The product launch is approaching, so my workload is _____."

3. Extremely interesting: _____

"I was reading about her life story. It is really _____"

4. A loud argument, or a serious dispute: _____

"There is a serious _____ between the two companies over image rights."

5. To start developing more and more quickly: _____

"Our social media campaign is _____. We are getting thousands of clicks each day"

6. To make something a lot worse: _____

"The long winter really _____ the Covid 19 pandemic."

7. Negative, often unintended consequences of an action: _____

"The loss of tourism had serious _____ for the country's economy."

8. To move speedily forward in time: _____

"Let's _____ to this time next year. What developments would you like to see in the company and where would you want to be?"

9. To decrease gradually in size, amount or strength: _____

"Our profits started to _____ at the end of last year."

10. To slow down or stop the progress of something: _____

"The construction of the new office was progressing very nicely. However, problems with funding soon _____ the project."

11. To decrease very quickly in value or amount: _____

"The politician's popularity _____ after he made some very offensive comments."

12. Very deep, great or intense: _____

"I have a _____ knowledge of geopolitics."

D) Comprehension

Can you answer the questions below about the text?

1. What does the author suggest as one of the potential problems of genetic modification?

2. The author explains that it will become more difficult to care for elderly people, because so many more people are living longer. What could potentially make this problem worse?

3. According to the author, what 4 problems are caused by social media in today's world?

4. What is the general feeling surrounding driverless car technology at the moment according to the author, and why?

5. What potential issues can arise from the development of pharmaceuticals to boost brain power?

6. What is 'The Singularity', and do you think that you will ever witness it in your lifetime?

7. In terms of the overall tone of the article, do you feel that the author has a positive or negative outlook on the future? Is your outlook similar to the author's?

E) Key Words in a New Context

Below you can find a paragraph. Can you fill in the gaps in the paragraph with the words from the box below? You may need to change the form of some of the verbs in order for them to fit into the sentence.

To gain momentum	intriguing	let's fast forward to	profound
To plummet	To mount	to dwindle	repercussions
To exacerbate	to tear yourself away from	to put the brakes on	row

The 11th Challenge, Will we Face another Pandemic like Covid?

There can be no doubt that the Covid 19 pandemic had a _____ impact on most people's lives, with serious _____ both for individuals and the global economy as a whole. Many people claim that such a global pandemic was a once in a generation event, further _____ by _____ over vaccine distribution and ways to mitigate the damage. However, other experts believe that the likelihood of another global pandemic in the next 30 years is relatively high.

On the one hand, it is true that sanitation around the world is improving rapidly, and charitable projects to boost healthcare have _____ since the "end" of the covid pandemic, or should we say at the point where the strength of the virus has finally started to _____ and the danger has decreased significantly enough to start such projects. Cases of certain serious diseases such as polio and measles have _____ over the past few years, and may soon disappear completely. This is mainly a result of better healthcare and better sanitation, cleaner water etc.

On the other hand, overpopulation of many areas is _____. The global population passed 8 billion people in 2022, and if we _____ to the year 2050, the population of the world is likely to reach nearly 10 billion despite a declining birth rate in some developed nations. We are also seeing a trend whereby people are migrating to big cities, meaning that these populations are becoming more and more concentrated in urban areas. Cities offer more opportunities and are often seen as more _____, especially for young people who are now much more mobile thanks to technology and travel. This could cause a perfect environment for a new pandemic to spring up. Many governments have implemented policies to encourage young people to _____ from big cities and to move to smaller villages. This has proved successful in some places but not in others.

Even if a new pandemic arose in the near future, we could hope that governments around the world would be able to coordinate and cooperate much more effectively than in 2019/20 and _____ the spread of the disease before it became too devastating.