

Eco Quiz
for
U3a C To COP Summer School

Centre for Alternative Technology

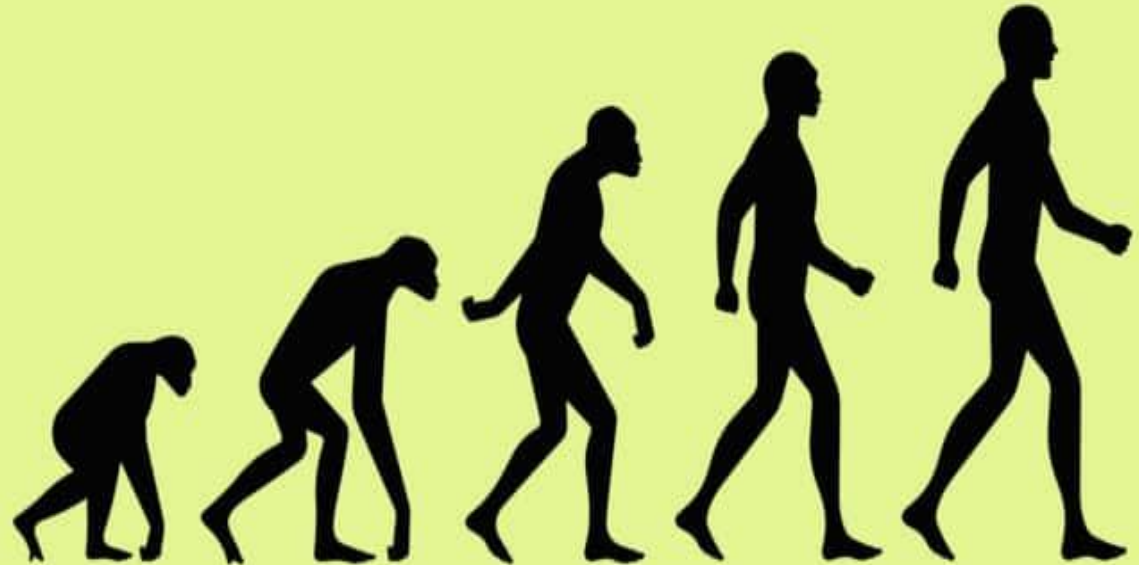
11-14th September 2023.

With thanks to The Guardian newspaper

- Based on the quiz published pre-COP26
- ‘ From Feral Pigs to Windfarms, How Good Is Your Green Knowledge ?’
- <https://www.theguardian.com/environment/2021/oct/30/from-feral-pigs-to-windfarms-how-good-is-your-green-knowledge-quiz>

1. When was atmospheric CO₂ last this high?

1. 30 years ago
2. 10,000 years ago
3. More than 4 million years ago

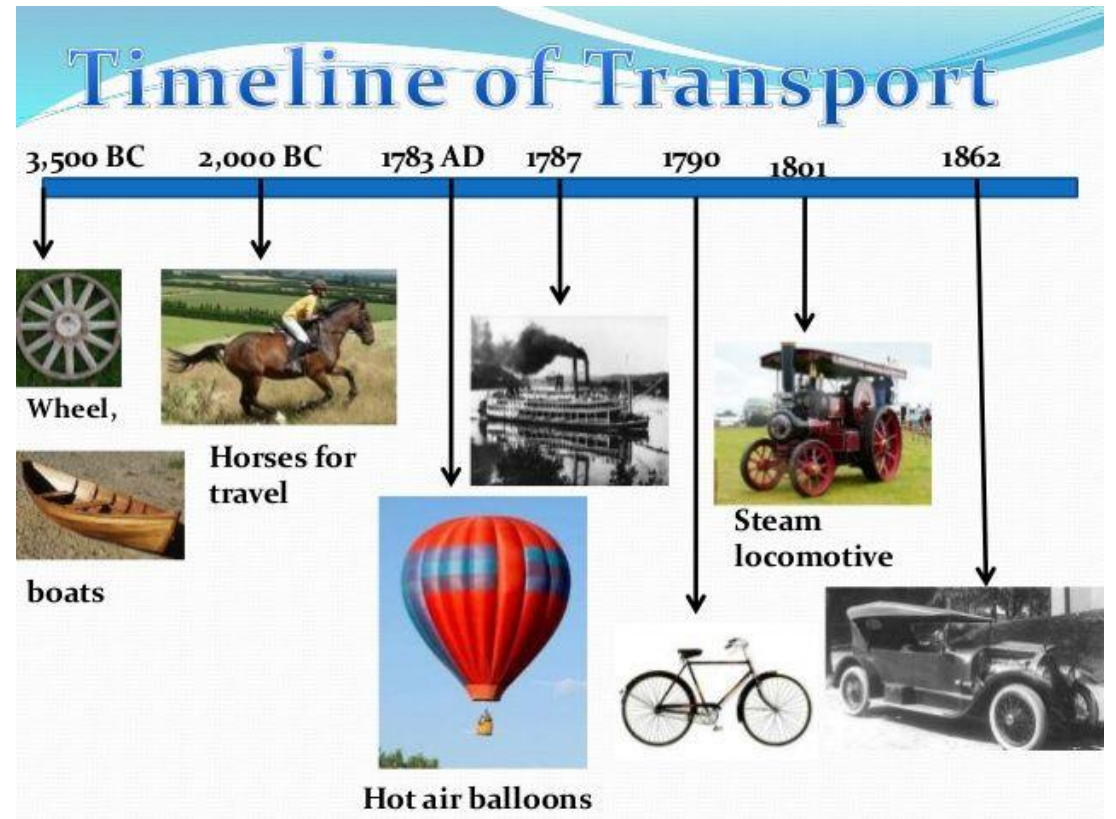


2. In which decade did the first electric cab arrive in London?

1. 1980s

2. 1890s

3. 2010s



3. Which actor urged collective action on the climate crisis in their 2016 Oscar acceptance speech? And which film was the award for?

1. Joaquin Phoenix

2. Leonardo Di Caprio

3. Timothee Chalamet



4. The Great Barrier Reef has experienced six mass bleaching events. What percentage of its 3,000 individual reefs were bleached in the most recent, in 2022?

1. 91%

2. 50%

3. 25%



5. At this time of year, polar bears on the Norwegian archipelago of Svalbard are waiting for the sea ice to refreeze so they can hunt. Under worst case scenarios, by how much are average temperatures expected to rise by 2100?



1. 2c

2. 5c

3. 10c

6. What absorbs the majority of Earth's excess heat?

1. The Oceans

2. Deserts

3. Forests

Yesterday



Today



Tomorrow



Stop Global Warming.

You're not only helping yourself.
You're helping others.

7. Which country recorded the most deforestation since 1990?

1. The Democratic Republic of the Congo
2. Brazil
3. Bolivia



8. Up to 1 million species are threatened with extinction, scientists estimate. But how many animal and plant species (including insects) are estimated to live on the planet?

1. 8 million
2. 14.5 million
3. 19 million



9. In September 2020, the base of the world's biggest tree, General Sherman in Sequoia National Park, was wrapped in a fire blanket to protect it from intense heat during the latest California wildfires. What did the tree used to be called?

1. Robert E Lee

2. Karl Marx

3. John F Kennedy

- Bonus point: How old is the tree?



10. What proportion of the Earth's atmosphere is composed of carbon dioxide?

1. 2%
2. 0.04%
3. 28%



11. In October 2020, Tesla became a \$1tn company after it received a major order. Who made the purchase and what did they buy?

1. Goldman Sachs bought 300,000 solar panels for their employees
2. Car rental firm Hertz bought 100,000 Model 3 cars
3. The US military bought 3,000 Model Y SUVs for a new net-zero regiment



12. Feral pigs are one of the most damaging invasive species, partly because of the way they uproot soil. What is their climate impact equivalent to?

1. 1.1m cars
2. One year of emissions from three coal power stations
3. Charging 100m mobile phones

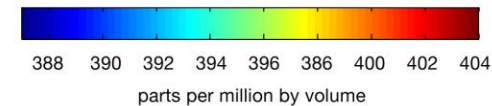
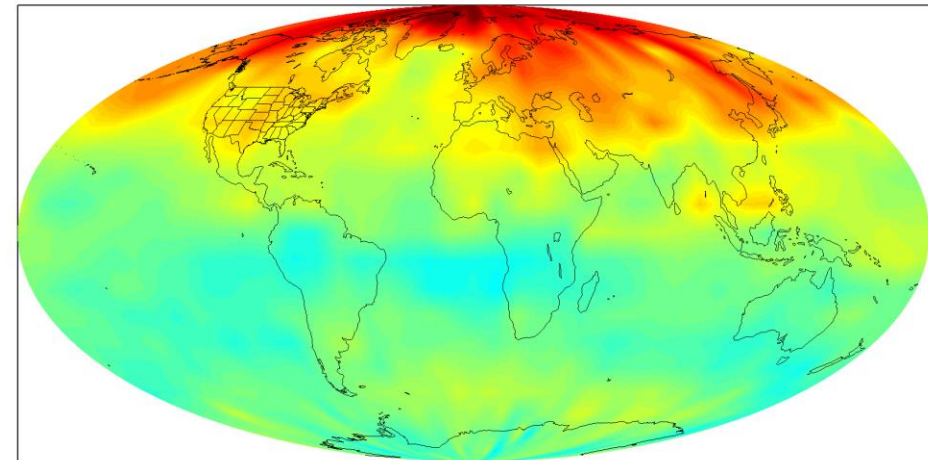


13. Once emitted, how long does CO₂ remain in the atmosphere?

1. Between 100 and 120 years
2. Between 30 and 50 years
3. Between 300 and 1,000 years

Carbon Dioxide in Earth's Mid-Troposphere, April 2013 Monthly Average

Global average concentration 396.86 ppm in mid-troposphere (roughly 3-6 miles (5-9 km) in altitude)
Data source: AIRS, the Atmospheric Infrared Sounder on NASA's Aqua satellite



14. Which of these countries has ratified the Paris agreement?

1. Iran
2. Russia
3. Libya



15. At the beginning of October 2021, the largest undersea power cable in the world began bringing energy to the UK from Norway. But which undersea creature is reportedly mesmerised by the cables?

1. Sperm whales
2. Sea snails
3. Brown crabs



16. In March 2022, which UK TV presenter vowed to continue their work after their house was targeted by arsonists, causing thousands of pounds' worth of damage?

1. Jeremy Clarkson

2. Kate Humble

3. Chris Packham



17. The Amazon is the world's biggest rainforest. Which one is the world's second biggest?

1. Sundaland, found on Borneo, Sumatra and Java
2. The Congo River Basin, Africa
3. Bosawas Biosphere Reserve, Nicaragua



18. Which country won an Earthshot prize in 2021 for its efforts to protect its forests and ecosystems?

1. UK
2. Guatemala
3. Costa Rica



19. The highest temperature in European history is believed to have been set in August 2021. What was it and where was it set?

1. 45.7C in Germany
2. 48.8C in Italy
3. 51.9C in France



20. Where is the world's biggest offshore wind farm?

1. US
2. UK
3. Germany



1. When was atmospheric CO2 last this high?

3. More than 4m years ago

- Scientists at NOAA's Mauna Loa Atmospheric Observatory in Hawaii measured the level of atmospheric CO2 at a monthly average of 419 parts per million (ppm) in May 2021. That is the highest level since accurate measurements began 63 years ago and is comparable to between 4.1m and 4.5m years ago, when it was about 400 ppm.

2. In which decade did the first electric cab arrive in London?

2. 1890s

In 1897, the London Electrical Cab Company operated a fleet of electric vehicles but closed two years later due to the high cost of batteries; 100% electric cabs only returned to the streets of London in 2019.

3. Which actor urged collective action on the climate crisis in their 2016 Oscar acceptance speech? And which film was the award for?

2. Leonardo di Caprio

In his 2016 Oscar acceptance speech for the Revenant, actor Leonardo DiCaprio emphasised the importance of tackling the climate crisis, calling for immediate action.

He said: "It is the most urgent threat facing our entire species, and we need to work collectively together and stop procrastinating."

4. The Great Barrier Reef has experienced six mass bleaching events. What percentage of its 3,000 individual reefs were bleached in the most recent, in 2022?

1. 91%

Coral bleaching is caused by rising ocean temperatures driven by global heating. Records began in 1998. Since then, there have been 6 mass bleaching events. In 2022, 91% of the Great Barrier Reef was bleached, aerial analysis revealed.

Great Barrier Reef Marine Park Authority reported above-average water temperatures in late summer 2022 which had caused coral bleaching throughout the 2,300km reef system, but particularly in the central region between Cape Tribulation and the Whitsundays. Source : <https://www.theguardian.com/environment/2022/may/10/devastating-90-of-reefs-surveyed-on-great-barrier-reef-affected-by-coral-bleaching-in-2022>

5. At this time of year, polar bears on the Norwegian archipelago of Svalbard are waiting for the sea ice to refreeze so they can hunt. Under worst case scenarios, by how much are average temperatures expected to rise by 2100?

3.10c

There has been a permanent weather station in the Svalbard region since 1911. Projections suggest warming in this area could be three times stronger leading up to the year 2100 than they have been in the past 100 years. This would result in average winter temperatures 10C higher than they currently are. Source:

<https://www.miljodirektoratet.no/globalassets/publikasjoner/m1242/m1242.pdf>

6. What absorbs the majority of Earth's excess heat?

1. The ocean

- Oceans absorb more than 90% of excess heat.
- Oceans control the planet's weather, and when the water heats up it evaporates, which then warms the atmosphere, creating more powerful storms, heavier rainfall and flooding.

7. Which country recorded the most deforestation since 1990?

- Deforestation Rates by Country 2023
- Top Ten Countries with the Most Deforestation:
- Rank Country Forest Area Change 1990-2020 (mi²) Change in Forest Area (%)
- 1 Brazil -356,287 -15.67
- 2 Indonesia-101,977 -22.28
- 3 DR Congo-94,495 -16.25
- 4 Angola -48,865 -15.97
- 5 Tazmania -44,962 -20.29
- 6 Myanmar-41,213 -27.22
- 7 Paraguay -36,463 -36.97
- 8 Bolivia -26,915 -12.06
- 9 Mozambique -25,614 -15.29
- 10 Argentina-25,602 -18.84

2. Brazil

- Brazil lost 1.7m hectares (4.2m acres) of forest in 2020 - 25% more primary forest compared to the previous year, according to the World Resources Institute. The data also showed an increase in fires, which rarely occur naturally in the Amazon.
- Source:
<https://research.wri.org/gfr/forest-pulse>

8. Up to 1 million species are threatened with extinction, scientists estimate. **But how many animal and plant species (including insects) are estimated to live on the planet?**

1. 8 million

- There are an estimated 8 million animal and plant species on Earth, including 5.5 million insect species. More than 40% of amphibian species and more than a third of marine mammals are threatened with extinction, many within decades, according to the IPBES.

(The **I**ntergovernmental **P**latform on **B**iodiversity and **E**cosystem **S**ervices)

9. In September, the base of the world's biggest tree, General Sherman in Sequoia national park, was wrapped in a fire blanket to protect it from intense heat during the latest California wildfires. What did the tree used to be called?

2. Karl Marx

- It was originally named after Karl Marx by a utopian socialist community called the Kaweah Colony, who controlled the land between 1886 and 1892. The community was disbanded when Sequoia national park was created and the tree was renamed for American civil war general William Tecumseh Sherman.
- Bonus point: The tree is believed to be between 2,300 and 2,700 years old.

10. What proportion of the Earth's atmosphere is composed of carbon dioxide?

2.0.04%

The atmosphere is 0.04% carbon dioxide, 78% nitrogen and 21% oxygen. It also has small amounts of other gases such as neon and hydrogen.

11. In October 2020, Tesla became a \$1tn company after it received a major order. Who made the purchase and what did they buy?

2. Car rental firm Hertz bought 100,000 Model 3 cars.

Hertz said it planned to build the largest electric vehicle rental fleet in North America.

12. Feral pigs are one of the most damaging invasive species, partly because of the way they uproot soil. What is their climate impact equivalent to?

1. 1m cars

- Researchers estimate that feral pigs around the world release 4.9m metric tonnes of carbon dioxide each year by uprooting soil, which is the equivalent of 1.1m cars.
- In regions with non-native wild pigs, it is estimated they uproot around 36,000 sq km (14,000 sq miles) of land a year.

13. Once emitted, how long does CO₂ remain in the atmosphere?

3. Between 300 and 1,000 years

- Half of the increase in atmospheric CO₂ has occurred since 1980.
- Because CO₂ hangs around for between 300 to 1,000 years, emissions endure for far longer than the human being who releases them.

14. Which of these countries has ratified the Paris agreement?

2. Russia

- Russia formally signed up to and ratified the agreement in 2019, four years after it was agreed.
- Iran, Iraq and Libya, Yemen and Eritrea signed, but have not ratified, the agreement.
- Iran is the world's sixth-highest greenhouse gas emitter; Iran's mitigation efforts have been rated "critically insufficient" by the Climate Action Tracker.

15. At the beginning of October 2021, the largest undersea power cable in the world began bringing energy to the UK from Norway. But which undersea creature is reportedly mesmerised by the cables?

3. Brown crabs

- Underwater cables for offshore energy emit an electromagnetic field which attracts brown crabs and causes them to stay where they are, according to a study at St Abbs marine station in Scotland.
- This causes cellular changes within the creatures and could have an impact on their migration habits, scientists warn.

16. In March 2022, which UK TV presenter vowed to continue their work after their house was targeted by arsonists, causing thousands of pounds' worth of damage?

3. Chris Packham

BBC Springwatch presenter Chris Packham says his car was set alight and his front gate burned down at his home in the New Forest.

The presenter said the masked attackers had been caught on CCTV and that Hampshire constabulary was investigating.

17.The Amazon is the world's biggest rainforest. Which one is the world's second biggest?

2.The Congo

- The Congo Basin contains the world's largest rainforest after the Amazon. At 202m hectares (500m acres) it spans a number of central African countries including Cameroon, Equatorial Guinea, Gabon, Central African Republic, the Democratic Republic of Congo and Republic of Congo.

18. Which country won an Earthshot prize in 2021 for its efforts to protect its forests and ecosystems?

3. Costa Rica

- Costa Rica won £1m in Prince William's Earthshot awards, which aim to recognise and reward those trying to tackle the climate crisis and Earth's most pressing challenges over the next 10 years.

19. The highest temperature in European history is believed to have been set in August 2021. What was it and where was it set?

2. 48.8C in Italy

- The temperature of 48.8C (119.85F) was measured at a monitoring station in Syracuse, Sicily, in August.
- The finding came amid a heatwave stretching across Italy, with fires blazing in much of the region for more than a week.
- <https://www.euronews.com/green/2023/07/19/cerberus-heatwave-why-is-it-so-hot-in-europe-and-how-long-will-it-last>

20. Where is the world's biggest offshore wind farm?

2. UK

- In 2020, the world's largest offshore wind farm was Hornsea 1 off the coast of Yorkshire. It produces enough electricity to power more than a million homes and covers an area of more than 400 sq kms, which is five times the size of the nearest city, Hull.
- On the 31 August 2022 Hornsea 2 came online. It surpassed Hornsea 1 as the world's biggest offshore wind farm, powering well over 1.4 million UK homes.
- Hornsea 3 was granted a Development Consents Order (DCO) in December 2020 by the Secretary of State for Business, Energy and Industrial Strategy. Once operational, it will be capable of generating enough power to meet the average daily needs of well over 2 million homes.
- Plans for a fourth project, Hornsea 4, are currently being developed.
<https://hornseaprojects.co.uk/>