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# Simulation Reveals Light-Speed Journey Around Earth

## Description

This simulation reveals the astonishing sight of travelling around Earth at the speed of light, which is approximately 186,000 miles per second. This remarkable experience has been brought to life through a video posted on YouTube by the channel Airplane Mode.

The simulation calculates that if one were to fly at a typical cruising speed of between 575 mph and 600 mph, the journey would take about 42 hours. In contrast, travelling at the speed of light would enable one to complete this circumnavigation in merely 0.13 seconds—approximately eight frames of video.

Starting in New York City, the simulation traverses the continental United States and crosses the Pacific Ocean before flying over Brisbane, Australia. It then slices through Zimbabwe, before returning over the Atlantic Ocean— all accomplished in that brief span of time.

For context, the simulation also depicts the duration required to circle the globe at the speed of sound, which is roughly 343 miles per second. This speed, while significantly slower than that of light, still represents a rapid pace. The comprehensive journey at the speed of sound is notably absent from the video, as it would require around 32 hours, still faster than the standard flight time by ten hours.

Currently, no aircraft can achieve the speed of light, and such travel might prove disorienting and pose health risks. The nearest possibility comes from hypersonic flights, capable of reaching speeds of 3,800 mph. Nevertheless, while extreme speeds remain theoretical, simulations continue to provide vivid comparisons with sound and light travel.

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## Vocabulary List:

1. **Simulation** /ˌsɪm.jəˈleɪ.jən/ (noun): The act of imitating a situation or process for study or training.
2. **Astonishing** /əˈstɒn.ɪ.ʃɪŋ/ (adjective): Causing great surprise or wonder.
3. **Circumnavigation** /ˌsɜːr.kəm.næv.ɪˈɡeɪ.jən/ (noun): The act of traveling all the way around something typically the Earth.
4. **Hypersonic** /ˌhaɪ.pərˈsɒn.ɪk/ (adjective): Relating to speeds of more than five times the speed of sound.
5. **Traverses** /trəˈvɜːrsɪz/ (verb): To travel across or through something.
6. **Disorienting** /dɪˈɔːr.i.ən.tɪŋ/ (adjective): Causing a loss of awareness of one's surroundings or position.

## Comprehension Questions



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## Multiple Choice

1. What is the approximate speed of light in miles per second?  
Option: 575 mph  
Option: 600 mph  
Option: 186,000 mph  
Option: 3,800 mph
2. How long would it take to circumnavigate the Earth at the speed of light?  
Option: 28 hours  
Option: 0.13 seconds  
Option: 10 hours  
Option: 3 days
3. Which channel posted the video depicting the simulation of travelling at the speed of light?  
Option: Airplane Mode  
Option: FastTrack Travel  
Option: LightSpeed Adventures  
Option: Galactic Journeys
4. What is the speed of sound in miles per second?  
Option: 343 mph  
Option: 600 mph  
Option: 186,000 mph  
Option: 3,800 mph
5. What is the speed of hypersonic flights in mph?  
Option: 575 mph  
Option: 600 mph  
Option: 186,000 mph  
Option: 3,800 mph
6. How many frames of video does it approximately take to complete the circumnavigation at the speed of light?  
Option: 8 frames  
Option: 20 frames  
Option: 40 frames  
Option: 100 frames



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### True-False

7. Travelling at the speed of sound is faster than travelling at the speed of light.
8. Hypersonic flights have already achieved the speed of light.
9. The video simulation includes the journey at the speed of sound.
10. Travelling at the speed of light poses no health risks.
11. Simulations provide comparisons between sound and light travel.
12. No aircraft can currently travel at the speed of light.

### Gap-Fill

13. If one were to fly around the Earth at the speed of sound, it would take approximately \_\_\_\_\_ hours.
14. Hypersonic flights are capable of reaching speeds of \_\_\_\_\_ mph.
15. The simulation reveals the astonishing sight of travelling around Earth at the speed of \_\_\_\_\_.
16. The simulation starts in \_\_\_\_\_ City.
17. Travelling at the speed of sound is roughly \_\_\_\_\_ miles per second.
18. The journey depicted in the video would require around \_\_\_\_\_ hours at the speed of sound.

### Answer

**Multiple Choice:** 1. 186,000 mph 2. 0.13 seconds 3. Airplane Mode 4. 343 mph 5. 3,800 mph 6. 8 frames

**True-False:** 7. False 8. False 9. False 10. False 11. True 12. True

**Gap-Fill:** 13. 32 14. 3,800 15. light 16. New York 17. 343



## Vocabulary quizzes

### Multiple Choice ( Select the Correct answer for each question. )

1. What type of system can operate independently without human intervention?

- Option: Manual
- Option: Semi-automatic
- Option: Automated
- Option: Mechanical

2. What concept focuses on meeting the needs of the present without compromising the ability of future generations to meet their own needs?

- Option: Profitability
- Option: Environmentalism
- Option: Sustainability
- Option: Innovation

3. Which speed range is classified as faster than supersonic?

- Option: Subsonic
- Option: Transonic
- Option: Hypersonic
- Option: Ultrasonic

4. What term describes the repetition of a process or cycle?

- Option: Integration
- Option: Iteration
- Option: Innovation
- Option: Inspection

5. What word means to improve the quality or value of something?

- Option: Decay
- Option: Diminish
- Option: Enhance
- Option: Destroy

6. Which term refers to the appreciation of beauty or good taste?

- Option: Functional
- Option: Aesthetic
- Option: Practical



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Option: Utilitarian

7. What does it mean to change something radically or fundamentally?

- Option: Stabilize
- Option: Revolutionise
- Option: Standardize
- Option: Imitate

8. Which term describes something crucial important or essential to achieve a goal?

- Option: Superficial
- Option: Incidental
- Option: Instrumental
- Option: Insignificant

9. What term describes a general direction in which something is developing or changing?

- Option: Stability
- Option: Trend
- Option: Static
- Option: Regularity

10. Which field of science is concerned with the behavior of physical bodies when subjected to forces or displacements?

- Option: Biology
- Option: Chemistry
- Option: Physics
- Option: Mechanics

**Gap-Fill ( Fill in the blanks with the correct word from the vocabulary list. )**

11. \_\_\_\_\_ involves individuals working together to achieve a common goal.

12. The \_\_\_\_\_ of the experiment results was confirmed through multiple trials.

13. The maze was designed to be \_\_\_\_\_ challenging participants to find their way out.

14. The artist \_\_\_\_\_ certain features of the sculpture to draw attention to its unique aspects.

15. Her artwork was displayed \_\_\_\_\_ at the center of the gallery for all visitors to see.



16. The study aimed to identify any \_\_\_\_\_ between the variables under analysis.
17. The chef created unique dishes through creative \_\_\_\_\_ of different culinary traditions.
18. The professor \_\_\_\_\_ the complex theories in a way that made them understandable to all students.
19. The hiking trail \_\_\_\_\_ the mountain range offering stunning views along the way.
20. The detective story involved a web of \_\_\_\_\_ that kept readers guessing until the end.

**Matching Sentences ( Match each definition to the correct word from the vocabulary list. )**

21. Pilots undergo training to experience realistic flying scenarios without risk.
22. The magician's trick was so that the audience gasped in amazement.
23. Ferdinand Magellan's expedition was the first successful of the globe.
24. She the idea of studying abroad for months before making a decision.
25. The taste of the dish came from the chef's meticulous selection of ingredients.
26. Chemists study the between different substances to understand chemical processes.
27. The organization aims to diversity and create an inclusive environment for all.
28. Cultural in the city have led to a unique fusion of art and music.
29. The Northern Lights are a natural that captivates viewers with its beauty.
30. Researchers conducted multiple tests to ensure the of their results.

**Answer**

**Multiple Choice:** 1. Automated 2. Sustainability 3. Hypersonic 4. Iteration 5. Enhance 6. Aesthetic  
7. Revolutionise 8. Instrumental 9. Trend 10. Mechanics

**Gap-Fill:** 11. Collaboration 12. validity 13. disorienting 14. accentuated 15. prominently 16. correlations  
17. amalgamations



18. elucidated 19. traverses 20. entanglement

**Matching sentence:** 1. Simulation 2. Astonishing 3. Circumnavigation 4. Contemplated 5. Refined 6. Reactions  
7. Embrace 8. Amalgamations 9. Phenomenon 10. Validity

## CATEGORY

1. Sci/Tech - LEVEL6

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