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## 27 Scientific Facts That Change Your Perspective

### Description

Scientists have achieved a breakthrough with a novel "bone glue" that can repair fractures in remarkably short timeframes. Developed through the use of a robotic device, this biodegradable gel can fix complex bone injuries in under three minutes. Once applied, the gel hardens to stabilise the bone and dissolves gradually as the body heals, suggesting a significant reduction in the need for invasive surgical procedures.

This technology represents a paradigm shift for emergency medicine, orthopaedics, and trauma care globally. Fewer surgical interventions may lead to less pain and faster recovery for patients, revolutionising treatment protocols and improving patient outcomes in acute environments.

In a separate advance, researchers have reconstructed the face of a 1.5-million-year-old *Homo erectus* using sophisticated digital mapping techniques. This reconstruction provides unprecedented insights into human evolution, showcasing a blend of human-like and primitive features that challenge previous perceptions of our ancestral lineage.

Furthermore, astronomers have unveiled the Rosette Nebula, a vast interstellar cloud over 5,000 light-years away, where new stars are forming. The intricate beauty of this cosmic phenomenon exemplifies the incredible processes at work in the universe.

Amid these advancements, the James Webb Space Telescope has discovered a "naked" black hole from the early universe, potentially resetting existing theories about black hole formation. This finding may indicate that the first black holes appeared before galaxies, prompting a reevaluation of cosmic evolution.

Looking ahead, the global scientific community anticipates further exploration into these revolutionary discoveries. Researchers are eager to delve deeper into the implications of their findings, paving the way for new understandings and applications across various fields.

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### Vocabulary List:

1. **breakthrough** //ˈbreɪkθruː// (noun): an important new discovery or development
2. **biodegradable** //ˌbaɪoʊdɪˈɡreɪdəbəl// (adjective): able to be broken down by natural processes
3. **invasive** //ɪnˈveɪsɪv// (adjective): involving cutting into the body for surgery
4. **paradigm** //ˈpærəˌdaɪm// (noun): a model or example for thinking or doing
5. **reconstructed** //ˌriːkənˈstrʌktɪd// (verb): built again or made again from remains
6. **unprecedented** //ʌnˈpreʃɪdɛntɪd// (adjective): never seen or done before by people



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## Comprehension Questions

### Multiple Choice

1. What is the purpose of the novel 'bone glue' developed by scientists?  
Option: To repair soft tissues  
Option: To repair fractures  
Option: To assist in surgery  
Option: To enhance bone growth
2. How quickly can the 'bone glue' fix complex bone injuries?  
Option: Under 30 seconds  
Option: Under one minute  
Option: Under three minutes  
Option: Under five minutes
3. What ancient human species was reconstructed by researchers?  
Option: Homo sapiens  
Option: Homo habilis  
Option: Homo erectus  
Option: Homo neanderthalensis
4. What has the James Webb Space Telescope discovered?  
Option: A new planet  
Option: A naked black hole  
Option: A dying star  
Option: A comet
5. Where is the Rosette Nebula located?  
Option: 3,000 light-years away  
Option: 5,000 light-years away  
Option: 10,000 light-years away  
Option: 1,000 light-years away
6. What impact does the new bone glue technology have on surgical procedures?  
Option: Increases the need for surgery



- Option: Reduces the need for surgery
- Option: Has no effect on surgery
- Option: Makes surgery more complicated

### True-False

7. The biodegradable gel can repair bone fractures in under five minutes.
8. The Rosette Nebula is an interstellar cloud where new stars are forming.
9. The discoveries mentioned have no impact on emergency medicine.
10. Astronomers believe the first black holes appeared after galaxies formed.
11. The face of Homo erectus was reconstructed using digital mapping techniques.
12. The new bone glue requires invasive surgery to be effective.

### Gap-Fill

13. The biodegradable gel can fix complex bone injuries in under \_\_\_\_\_ minutes.
14. The Rosette Nebula is located over \_\_\_\_\_ light-years away.
15. This technology represents a paradigm shift for emergency medicine, orthopaedics, and \_\_\_\_\_ care.
16. The James Webb Space Telescope has discovered a 'naked' \_\_\_\_\_ hole.
17. Researchers are eager to delve deeper into the \_\_\_\_\_ of their findings.
18. The reconstruction of Homo erectus provides insights into human \_\_\_\_\_.

### Answer

**Multiple Choice:** 1. To repair fractures 2. Under three minutes 3. Homo erectus 4. A naked black hole 5. 5,000 light-years away 6. Reduces the need for surgery

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

**Gap-Fill:** 13. three



14. 5,000 15. trauma 16. black 17. implications 18. evolution

## Vocabulary quizzes

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

1. What term describes materials that can be broken down by natural processes?  
Option: Invasive  
Option: Biodegradable  
Option: Reconstructed  
Option: Synthetic
2. What device is used to increase an engine's efficiency and power by forcing more air into the combustion chamber?  
Option: Supercharger  
Option: Turbocharger  
Option: Compressor  
Option: Exhaust
3. Which word describes something that has never been done or experienced before?  
Option: Commonplace  
Option: Routine  
Option: Unprecedented  
Option: Mundane
4. What term refers to the complete set of genes or genetic material present in a cell or organism?  
Option: Phenotype  
Option: Genotype  
Option: Genome  
Option: Chromosome
5. What type of vehicle is typically associated with luxury and often used for special occasions?  
Option: Sedan  
Option: Limousine  
Option: Coupe  
Option: Hatchback
6. What word describes the remains or impression of a prehistoric organism preserved in petrified form?  
Option: Fossil  
Option: Specimen  
Option: Artifact



Option: Relic

7. Which term is used to classify mammals that give birth to live young rather than laying eggs?

Option: Eutherian

Option: Marsupial

Option: Monotreme

Option: Ovoviviparous

8. What is the term used to measure the power output of engines?

Option: Torque

Option: Kilowatt

Option: Horsepower

Option: RPM

9. What does the acronym CRT stand for in display technology?

Option: Cathode Ray Tube

Option: Crystal Red Technology

Option: Color Ratio Technique

Option: Current Response Time

10. What term refers to the detail an image holds and is often measured in pixels?

Option: Clarity

Option: Resolution

Option: Aspect Ratio

Option: Contrast

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

11. The \_\_\_\_\_ of resources has led to increased competition and innovation.

12. Companies often seek to \_\_\_\_\_ new technologies to enhance their products.

13. The archaeologists \_\_\_\_\_ the ancient structure based on the remnants found at the site.

14. The \_\_\_\_\_ is the ratio of the width to the height of an image or screen.

15. Certain species are considered \_\_\_\_\_ because they can disrupt local ecosystems.

16. The \_\_\_\_\_ between different species is crucial for maintaining ecological balance.



17. The flight training included a \_\_\_\_\_ environment for pilots to practice safely.
18. Engineers often consider \_\_\_\_\_ to improve the performance of vehicles.
19. Humans usually have a total of twelve \_\_\_\_\_ in their permanent dentition.
20. The team focused on the \_\_\_\_\_ of processes to increase efficiency and reduce costs.

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

21. The scientists made a significant breakthrough in renewable energy technology.
22. The new packaging materials are fully biodegradable and environmentally friendly.
23. The theory introduced a new paradigm in the field of physics.
24. Invasive species can cause significant harm to local ecosystems.
25. The biologist collected a specimen for further study and analysis.
26. The changes in climate are leading to unprecedented challenges for communities worldwide.
27. Eutherian mammals are characterized by their live births and complex placental structures.
28. The turbocharger significantly improved the engine's performance and efficiency.
29. The outdated CRT technology has been largely replaced by LCD and LED displays.
30. The car's horsepower is a key factor in its speed and acceleration capabilities.

**Answer**

**Multiple Choice:** 1. Biodegradable 2. Turbocharger 3. Unprecedented 4. Genome 5. Limousine 6. Fossil  
7. Eutherian 8. Horsepower 9. Cathode Ray Tube 10. Resolution

**Gap-Fill:** 11. scarcity 12. exploit 13. reconstructed 14. aspect ratio 15. invasive 16. interplay 17. simulated  
18. modification 19. molars 20. optimization

**Matching sentence:** 1. breakthrough 2. biodegradable 3. paradigm 4. invasive 5. specimen 6. unprecedented  
7. eutherian 8. turbocharger 9. CRT 10. horsepower

**CATEGORY**

1. Sci/Tech - LEVEL6



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