Horses have long been admired for their strength and speed, but recent studies suggest they also possess remarkable cognitive abilities. A research team led by Dr. Helena Mortensen at the University of Copenhagen conducted experiments to examine the problem-solving skills and emotional intelligence of domestic horses. The team worked with a group of thoroughbreds and Icelandic horses, testing their responses to various tasks involving memory, communication, and learning. In one experiment, horses were presented with two buckets, only one of which contained food. A trainer pointed toward the correct bucket. Most horses quickly learned to follow the human gesture to find the reward, indicating an understanding of referential cues—a skill previously believed to be mostly limited to dogs and primates. Further analysis involved observing horses' ability to remember the location of hidden food even after delays of up to one hour. Their success in these tasks suggests that horses have a form of short-term memory essential for navigation and survival in the wild. Additionally, the horses showed signs of emotional awareness, changing their behavior based on whether a familiar human showed positive or negative facial expressions. Although horses do not possess the same level of brain complexity as primates, the study concludes that their cognitive abilities have often been underestimated. Dr. Mortensen notes that "understanding animal intelligence requires looking beyond brain size and examining how animals interact with their environment."

66. According to the passage, horses ----.

A) mainly use their speed and strength rather than mental ability to survive in the wild

B) are not capable of understanding human gestures or expressions

C) lack the ability to remember things for more than a few seconds

D) have cognitive skills that were previously not fully appreciated

E) outperform primates in most problem-solving tasks

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67. One can understand from the passage that the intelligence of horses ----.

A) may be linked to how they respond to human emotions and social signals

B) is less complex than that of dogs and therefore harder to study

olmayan kıyas + OLMAYAN sebep sonuç ilişkisi

C) cannot be analyzed without involving at least two different horse breeds

OLUMSUZLUK TESPİTİ + SAYISAL VERİ ,miktar

D) is based purely on physical instinct rather than memory

KISITLAMA İFADELERİ only merely solely purely ALONE limited to confined restricted to, ALL TEK

E) comes from their brain size, which is larger than that of most animals

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68. Which of the following statements is true according to the passage?

A) The horses in the study failed to follow the trainer's instructions when food was hidden.

B) The study reveals that horses can interpret and respond to certain human gestures.

C) Emotional awareness in horses is only visible during physical tasks involving movement.

D) The horses' intelligence was measured using tools originally developed for primates.

E) Researchers believe brain size is the most important factor in animal intelligence.

Horses have long been admired for their strength and speed, but recent studies suggest they also possess remarkable cognitive abilities.

A research team led by Dr. Helena Mortensen at the University of Copenhagen conducted experiments to examine the problem-solving skills and emotional intelligence of domestic horses.

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Dr. Mortensen notes that "understanding animal intelligence requires looking beyond brain size and examining how animals interact with their environment."

Atlar güçleri ve hızlarıyla uzun zamandır hayranlık uyandırıyor, ancak son çalışmalar onların aynı zamanda dikkate değer bilişsel yeteneklere de sahip olduğunu gösteriyor.

Kopenhag Üniversitesi'nden Dr. Helena Mortensen liderliğindeki bir araştırma ekibi, evcil atların problem çözme becerilerini ve duygusal zekalarını incelemek için deneyler yaptı.

Ekip, bir grup safkan ve İzlanda atıyla çalışarak hafıza, iletişim ve öğrenmeyi içeren çeşitli görevlere verdikleri tepkileri test etti.

Bir deneyde, atlara sadece birinde yiyecek bulunan iki kova sunuldu.

Bir eğitmen doğru kovayı işaret etti. Çoğu at, ödülü bulmak için insan hareketini takip etmeyi çabucak öğrendi ve bu da daha önce çoğunlukla köpekler ve primatlarla sınırlı olduğuna inanılan bir beceri olan referans ipuçlarını anladığını gösterdi.

Daha ileri analizler, atların bir saate varan gecikmelerden sonra bile saklı yiyeceklerin yerini hatırlama becerilerini gözlemlemeyi içeriyordu.

Bu görevlerdeki başarıları, atların vahşi doğada yön bulma ve hayatta kalma için gerekli olan bir tür kısa süreli hafızaya sahip olduklarını göstermektedir.

yoksa

Ayrıca atlar, tanıdık bir insanın olumlu ya da olumsuz yüz ifadeleri göstermesine bağlı olarak davranışlarını değiştirerek duygusal farkındalık belirtileri göstermiştir.

Atlar primatlarla aynı düzeyde beyin karmaşıklığına sahip olmasalar da, çalışma bilişsel yeteneklerinin genellikle hafife alındığı sonucuna varmaktadır.

Dr. Mortensen, “hayvan zekâsını anlamak için beyin büyüklüğünün ötesine bakmak ve hayvanların çevreleriyle nasıl etkileşime girdiklerini incelemek gerektiğini” belirtiyor.

Aeroponics, a method of growing plants without soil or traditional mediums like water baths, is gaining popularity in modern agriculture for its efficiency and sustainability. In this system, plant roots are suspended in the air and sprayed with a nutrient-rich mist at regular intervals. Unlike conventional farming, this technique minimizes water usage and eliminates the need for pesticides, as the controlled environment reduces exposure to pathogens. Traditionally, soil has been viewed as essential for supporting plant structure and supplying nutrients. However, aeroponics challenges this notion by showing that plants can thrive with direct root exposure to nutrients and oxygen. Researchers at the Dutch Agricultural Research Institute conducted trials using lettuce, tomatoes, and herbs grown in aeroponic systems. The results demonstrated faster growth rates and higher yields compared to soil-grown plants. One of the biggest advantages of aeroponics is its scalability in urban settings. Vertical farms using this technology can be installed in small indoor areas and monitored with sensors to adjust humidity, light, and nutrient levels. This makes it an attractive option in areas where land is scarce or unsuitable for traditional farming. As global food demand increases, aeroponics may play a vital role in the future of agriculture.

69. According to the passage, aeroponics is considered an innovative technique because ----.

A) it makes use of soil as a base for spraying nutrients efficiently

B) it depends on artificial sunlight to promote plant growth

C) it completely eliminates the need for nutrients and water

ortadan kaldırmak

D) it allows plants to grow without using soil or water baths

olanak sağlar

E) it supports traditional farming by improving soil quality

TARAFTAR OLMAK XX KARŞI OLMAK

2 + 2 = 4

Aeroponics, a method of growing plants without soil or traditional mediums like water baths, is gaining popularity in modern agriculture for its efficiency and sustainability. In this system, plant roots are suspended in the air and sprayed with a nutrient-rich mist at regular intervals. Unlike conventional farming, this technique minimizes water usage and eliminates the need for pesticides, as the controlled environment reduces exposure to pathogens. Traditionally, soil has been viewed as essential for supporting plant structure and supplying nutrients. However, aeroponics challenges this notion by showing that plants can thrive with direct root exposure to nutrients and oxygen. Researchers at the Dutch Agricultural Research Institute conducted trials using lettuce, tomatoes, and herbs grown in aeroponic systems. The results demonstrated faster growth rates and higher yields compared to soil-grown plants. One of the biggest advantages of aeroponics is its scalability in urban settings. Vertical farms using this technology can be installed in small indoor areas and monitored with sensors to adjust humidity, light, and nutrient levels. This makes it an attractive option in areas where land is scarce or unsuitable for traditional farming. As global food demand increases, aeroponics may play a vital role in the future of agriculture.

70. Which of the following is true about aeroponics?

A) It uses soil only in limited quantities, mainly for root protection.

B) Plants can grow more slowly due to the absence of natural elements like rain and wind.

C) The system ensures that nutrients and oxygen are delivered directly to roots.

D) It cannot be implemented in cities because of the space it requires.

E) Its effectiveness has only been tested on grains and root vegetables.

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71. What is the passage mainly about?

A) The increasing use of pesticides in soil-based agriculture

B) A comparison of various water-based growing systems

C) The reasons why lettuce and herbs are easier to grow than other crops

D) Urban agriculture's impact on traditional farming methods

E) A soil-free growing method that offers benefits for modern farming

Aeroponics, a method of growing plants without soil or traditional mediums like water baths, is gaining popularity in modern agriculture for its efficiency and sustainability.

Toprak veya su banyosu gibi geleneksel ortamlar olmadan bitki yetiştirme yöntemi olan aeroponik, verimliliği ve sürdürülebilirliği nedeniyle modern tarımda popülerlik kazanıyor.

In this system, plant roots are suspended in the air and sprayed with a nutrient-rich mist at regular intervals.

Bu sistemde bitki kökleri havada asılı tutulur ve düzenli aralıklarla besin açısından zengin bir sis püskürtülür.

Unlike conventional farming, this technique minimizes water usage and eliminates the need for pesticides, as the controlled environment reduces exposure to pathogens.

Geleneksel tarımın aksine, bu teknik su kullanımını en aza indirir ve kontrollü ortam patojenlere maruz kalmayı azalttığı için pestisit ihtiyacını ortadan kaldırır.

Traditionally, soil has been viewed as essential for supporting plant structure and supplying nutrients. However, aeroponics challenges this notion by showing that plants can thrive with direct root exposure to nutrients and oxygen.

Geleneksel olarak toprak, bitki yapısını desteklemek ve besin sağlamak için gerekli görülmüştür. Ancak aeroponik, bitkilerin besin ve oksijene doğrudan kök maruziyeti ile gelişebileceğini göstererek bu düşünceye meydan okuyor.

Researchers at the Dutch Agricultural Research Institute conducted trials using lettuce, tomatoes, and herbs grown in aeroponic systems.

Hollanda Tarımsal Araştırma Enstitüsü'ndeki araştırmacılar, aeroponik sistemlerde yetiştirilen marul, domates ve otları kullanarak denemeler yaptı.

The results demonstrated faster growth rates and higher yields compared to soil-grown plants.

Sonuçlar, toprakta yetiştirilen bitkilere kıyasla daha hızlı büyüme oranları ve daha yüksek verim gösterdi.

One of the biggest advantages of aeroponics is its scalability in urban settings.

Aeroponiğin en büyük avantajlarından biri de kentsel ortamlarda ölçeklenebilir olmasıdır.

build / erect /set up/ establish

Vertical farms using this technology can be installed in small indoor areas and monitored with sensors to adjust humidity, light, and nutrient levels.

Bu teknolojiyi kullanan dikey çiftlikler küçük kapalı alanlara kurulabilir ve nem, ışık ve besin seviyelerini ayarlamak için sensörlerle izlenebilir.

This makes it an attractive option in areas where land is scarce or unsuitable for traditional farming.

Bu da arazinin az olduğu veya geleneksel tarım için uygun olmadığı bölgelerde bu teknolojiyi cazip bir seçenek haline getiriyor.

As global food demand increases, aeroponics may play a vital role in the future of agriculture.

Küresel gıda talebi arttıkça, aeroponik tarımın geleceğinde hayati bir rol oynayabilir.

Soil pollution, the contamination of soil by harmful substances, is becoming an increasingly serious threat to agriculture, human health, and the environment. It is often caused by industrial activity, improper waste disposal, excessive use of chemical fertilizers and pesticides, and oil spills. These pollutants alter the natural composition of the soil, reducing its fertility and disrupting the balance of nutrients essential for plant growth. A recent study by environmental scientists at the University of Helsinki found that heavy metals such as lead, mercury, and cadmium are among the most dangerous contaminants. These elements can accumulate in crops and enter the food chain, posing serious health risks to humans and animals. In many developing regions, the lack of regulations and monitoring systems worsens the situation, allowing pollutants to build up unnoticed over time. One method being used to address soil pollution is phytoremediation, which involves growing specific plants that can absorb or neutralize toxins from the soil. Although this technique shows promise, it is time-consuming and often limited to certain types of contaminants. Experts argue that the most effective solution is prevention through stricter environmental policies and sustainable farming practices that reduce the introduction of harmful substances into the soil.

72. According to the passage, soil pollution ----.

A) is mainly caused by natural processes such as erosion and flooding

B) leads to the loss of biodiversity but increases soil fertility in the long term

C) allows for higher agricultural productivity if managed properly

D) affects the nutritional quality of crops and poses risks to health

E) can easily be reversed by planting trees and reducing rainfall

Soil pollution, the contamination of soil by harmful substances, is becoming an increasingly serious threat to agriculture, human health, and the environment. It is often caused by industrial activity, improper waste disposal, excessive use of chemical fertilizers and pesticides, and oil spills. These pollutants alter the natural composition of the soil, reducing its fertility and disrupting the balance of nutrients essential for plant growth. A recent study by environmental scientists at the University of Helsinki found that heavy metals such as lead, mercury, and cadmium are among the most dangerous contaminants. These elements can accumulate in crops and enter the food chain, posing serious health risks to humans and animals. In many developing regions, the lack of regulations and monitoring systems worsens the situation, allowing pollutants to build up unnoticed over time. One method being used to address soil pollution is phytoremediation, which involves growing specific plants that can absorb or neutralize toxins from the soil. Although this technique shows promise, it is time-consuming and often limited to certain types of contaminants. Experts argue that the most effective solution is prevention through stricter environmental policies and sustainable farming practices that reduce the introduction of harmful substances into the soil.

73. Which of the following is true about soil pollution?

A) It is mainly a problem in developed countries due to industrialization.

B) Phytoremediation removes all pollutants from the soil immediately.

C) The presence of heavy metals in soil is not harmful unless they affect wildlife.

D) Soil contaminants can accumulate in food and affect both animals and people.

E) The effects of pollution are generally visible and easily detected in soil.

Soil pollution, the contamination of soil by harmful substances, is becoming an increasingly serious threat to agriculture, human health, and the environment. It is often caused by industrial activity, improper waste disposal, excessive use of chemical fertilizers and pesticides, and oil spills. These pollutants alter the natural composition of the soil, reducing its fertility and disrupting the balance of nutrients essential for plant growth. A recent study by environmental scientists at the University of Helsinki found that heavy metals such as lead, mercury, and cadmium are among the most dangerous contaminants. These elements can accumulate in crops and enter the food chain, posing serious health risks to humans and animals. In many developing regions, the lack of regulations and monitoring systems worsens the situation, allowing pollutants to build up unnoticed over time. One method being used to address soil pollution is phytoremediation, which involves growing specific plants that can absorb or neutralize toxins from the soil. Although this technique shows promise, it is time-consuming and often limited to certain types of contaminants. Experts argue that the most effective solution is prevention through stricter environmental policies and sustainable farming practices that reduce the introduction of harmful substances into the soil.

74. What is the passage mainly about?

A) The advantages of using fertilizers in modern agriculture

B) The causes, consequences, and possible solutions for soil pollution

C) How oil spills damage marine ecosystems more than farmland

D) The use of chemicals in pest control to protect crops

E) The development of high-yield crops resistant to pollution

Soil pollution, the contamination of soil by harmful substances, is becoming an increasingly serious threat to agriculture, human health, and the environment.

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Experts argue that the most effective solution is prevention through stricter environmental policies and sustainable farming practices that reduce the introduction of harmful substances into the soil.

Toprağın zararlı maddelerle kirlenmesi anlamına gelen toprak kirliliği, tarım, insan sağlığı ve çevre için giderek daha ciddi bir tehdit haline gelmektedir.
Genellikle endüstriyel faaliyetler, uygunsuz atık bertarafı, kimyasal gübre ve pestisitlerin aşırı kullanımı ve petrol sızıntılarından kaynaklanmaktadır.

Bu kirleticiler toprağın doğal yapısını değiştirerek verimliliğini azaltmakta ve bitki büyümesi için gerekli besin dengesini bozmaktadır.

Helsinki Üniversitesi'ndeki çevre bilimcileri tarafından yakın zamanda yapılan bir araştırma, kurşun, cıva ve kadmiyum gibi ağır metallerin en tehlikeli kirleticiler arasında olduğunu ortaya koymuştur.

Bu elementler mahsullerde birikebilir ve besin zincirine girerek insanlar ve hayvanlar için ciddi sağlık riskleri oluşturabilir.

Gelişmekte olan birçok bölgede, düzenleme ve izleme sistemlerinin eksikliği durumu daha da kötüleştirmekte ve kirleticilerin zaman içinde fark edilmeden birikmesine izin vermektedir.

Toprak kirliliğini ele almak için kullanılan yöntemlerden biri, topraktaki toksinleri emebilen veya nötralize edebilen belirli bitkilerin yetiştirilmesini içeren fitoremediasyondur.

Bu teknik umut vaat etse de zaman alıcıdır ve genellikle belirli kirletici türleriyle sınırlıdır.

Uzmanlar en etkili çözümün daha sıkı çevre politikaları ve toprağa zararlı maddelerin girişini azaltan sürdürülebilir tarım uygulamaları yoluyla önleme olduğunu savunmaktadır.

The muscular and nervous systems work closely together to control movement, balance, and coordination in the human body. While muscles are responsible for producing movement by contracting and relaxing, the nervous system acts as a control center, sending signals that instruct muscles on how and when to act. This communication occurs through a complex network of nerve cells called neurons. When a person decides to move, the brain sends an electrical signal down the spinal cord and through motor neurons to specific muscles. These neurons release chemical messengers called neurotransmitters, which trigger muscle fibers to contract. This process happens in milliseconds, allowing for rapid and precise movements such as walking, writing, or even blinking. Disorders affecting either the muscular or nervous systems can lead to serious impairments. For example, multiple sclerosis (MS) is a neurological disease where the protective layer around nerve fibers breaks down, disrupting signal transmission. On the muscular side, conditions like muscular dystrophy cause muscles to weaken and waste away over time. In both cases, the loss of proper communication between the systems leads to reduced mobility and quality of life. Researchers continue to study the interaction between nerves and muscles to develop better treatments. Techniques such as physical therapy, medication, and even brain-computer interfaces aim to restore function and improve outcomes for patients suffering from neuromuscular conditions.

75. According to the passage, the nervous system ----.

A) transmits signals that coordinate muscle activity

B) helps muscles grow and regenerate faster after injuries

C) functions independently of the muscular system

D) stores chemical messengers within the spinal cord

E) prevents muscle disorders by strengthening neurons

The muscular and nervous systems work closely together to control movement, balance, and coordination in the human body. While muscles are responsible for producing movement by contracting and relaxing, the nervous system acts as a control center, sending signals that instruct muscles on how and when to act. This communication occurs through a complex network of nerve cells called neurons. When a person decides to move, the brain sends an electrical signal down the spinal cord and through motor neurons to specific muscles. These neurons release chemical messengers called neurotransmitters, which trigger muscle fibers to contract. This process happens in milliseconds, allowing for rapid and precise movements such as walking, writing, or even blinking. Disorders affecting either the muscular or nervous systems can lead to serious impairments. For example, multiple sclerosis (MS) is a neurological disease where the protective layer around nerve fibers breaks down, disrupting signal transmission. On the muscular side, conditions like muscular dystrophy cause muscles to weaken and waste away over time. In both cases, the loss of proper communication between the systems leads to reduced mobility and quality of life. Researchers continue to study the interaction between nerves and muscles to develop better treatments. Techniques such as physical therapy, medication, and even brain-computer interfaces aim to restore function and improve outcomes for patients suffering from neuromuscular conditions.

76. Which of the following is true according to the passage?

A) Muscle movement occurs only when the body is under stress.

B) Neurotransmitters slow down the communication between muscles and nerves.

C) Both muscle and nerve disorders can result in reduced movement and mobility.

D) The brain directly sends signals to each muscle without using neurons.

E) Physical therapy can cure all types of neuromuscular disorders completely.

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77. What is the passage mainly about?

substitute

A) How brain-computer interfaces can replace the nervous system

B) The chemical composition of neurotransmitters

C) The relationship and coordination between the muscular and nervous systems

D) The differences between voluntary and involuntary muscles

E) The structure of the spinal cord and its role in digestion

The muscular and nervous systems work closely together to control movement, balance, and coordination in the human body.

While muscles are responsible for producing movement by contracting and relaxing, the nervous system acts as a control center, sending signals that instruct muscles on how and when to act.

This communication occurs through a complex network of nerve cells called neurons.

Kas ve sinir sistemleri insan vücudundaki hareket, denge ve koordinasyonu kontrol etmek için yakın bir şekilde birlikte çalışır.

Kaslar kasılarak ve gevşeyerek hareket üretmekten sorumluyken, sinir sistemi kaslara nasıl ve ne zaman hareket edecekleri konusunda talimat veren sinyaller göndererek bir kontrol merkezi görevi görür.

Bu iletişim, nöron adı verilen karmaşık bir sinir hücresi ağı aracılığıyla gerçekleşir.

When a person decides to move, the brain sends an electrical signal down the spinal cord and through motor neurons to specific muscles.

These neurons release chemical messengers called neurotransmitters, which trigger muscle fibers to contract.

This process happens in milliseconds, allowing for rapid and precise movements such as walking, writing, or even blinking.

Disorders affecting either the muscular or nervous systems can lead to serious impairments.

Bir kişi hareket etmeye karar verdiğinde, beyin omurilikten aşağıya ve motor nöronlar aracılığıyla belirli kaslara bir elektrik sinyali gönderir.

Bu nöronlar, kas liflerinin kasılmasını tetikleyen nörotransmitter adı verilen kimyasal haberciler salgılar.

Bu süreç milisaniyeler içinde gerçekleşir ve yürüme, yazma ve hatta göz kırpma gibi hızlı ve hassas hareketlere izin verir.

Kas ya da sinir sistemlerini etkileyen bozukluklar ciddi bozukluklara yol açabilir.

For example, multiple sclerosis (MS) is a neurological disease where the protective layer around nerve fibers breaks down, disrupting signal transmission.

On the muscular side, conditions like muscular dystrophy cause muscles to weaken and waste away over time.

Örneğin, multipl skleroz (MS) sinir liflerinin etrafındaki koruyucu tabakanın parçalanarak sinyal iletimini bozduğu nörolojik bir hastalıktır.

Kas tarafında ise kas distrofisi gibi durumlar kasların zayıflamasına ve zamanla erimesine neden olur.

In both cases, the loss of proper communication between the systems leads to reduced mobility and quality of life.

Researchers continue to study the interaction between nerves and muscles to develop better treatments.

Her iki durumda da, sistemler arasındaki uygun iletişimin kaybı hareket kabiliyetinin ve yaşam kalitesinin azalmasına yol açar.

Araştırmacılar daha iyi tedaviler geliştirmek için sinirler ve kaslar arasındaki etkileşimi incelemeye devam etmektedir.

Techniques such as physical therapy, medication, and even brain-computer interfaces aim to restore function and improve outcomes for patients suffering from neuromuscular conditions.

Fizik tedavi, ilaç tedavisi ve hatta beyin-bilgisayar arayüzleri gibi teknikler, nöromüsküler durumlardan muzdarip hastalar için işlevi geri kazandırmayı ve sonuçları iyileştirmeyi amaçlamaktadır.

The birth of the universe, also known as the Big Bang, is believed to have occurred around 13.8 billion years ago. According to this widely accepted scientific theory, the universe began as a singularity—a point of infinite density and temperature. Within a fraction of a second, this point expanded rapidly in an event known as cosmic inflation, giving rise to space, time, and matter. In the first few minutes after the Big Bang, simple elements such as hydrogen and helium began to form through nuclear reactions. As the universe continued to cool and expand, atoms were able to combine, eventually forming stars and galaxies. Over billions of years, these stars created heavier elements through nuclear fusion, which were later dispersed when massive stars exploded as supernovae. Evidence supporting the Big Bang theory includes the cosmic microwave background radiation, a faint glow detected throughout the universe that is thought to be the leftover heat from the early universe. Additionally, observations of galaxies show that they are moving away from each other, indicating that the universe is still expanding. While many questions remain—such as what caused the Big Bang or what existed before it—advances in astrophysics and space observation continue to offer new insights into the origins of the cosmos.

78. According to the passage, the Big Bang ----.

A) is a theory with no physical evidence to support it

B) occurred when galaxies collided and formed stars

C) marks the beginning of time, space, and matter

D) caused stars to disappear and form black holes

E) happened due to the explosion of the first planet

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79. Which of the following is true according to the passage?

A) Elements like hydrogen and helium were created inside supernovae.

B) The Big Bang theory explains what existed before the universe.

C) The universe has remained the same size since the Big Bang occurred.

D) Galaxies are moving closer to each other due to cosmic contraction.

E) The cosmic microwave background supports the Big Bang theory.

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80. What is the passage mainly about?

A) Different types of galaxies and their life cycles

B) The creation of black holes and their role in space

C) A scientific explanation of how the universe began

D) The formation of planets in our solar system

E) A comparison between the Big Bang and other theories

The birth of the universe, also known as the Big Bang, is believed to have occurred around 13.8 billion years ago.

Büyük Patlama olarak da bilinen evrenin doğuşunun yaklaşık 13,8 milyar yıl önce gerçekleştiğine inanılmaktadır.

According to this widely accepted scientific theory, the universe began as a singularity—a point of infinite density and temperature.

Yaygın olarak kabul gören bu bilimsel teoriye göre evren, sonsuz yoğunluk ve sıcaklıkta bir nokta olan tekillik olarak başlamıştır.

Within a fraction of a second, this point expanded rapidly in an event known as cosmic inflation, giving rise to space, time, and matter.

Saniyenin çok küçük bir bölümünde bu nokta kozmik şişme olarak bilinen bir olayla hızla genişledi ve uzay, zaman ve madde ortaya çıktı.

In the first few minutes after the Big Bang, simple elements such as hydrogen and helium began to form through nuclear reactions.

Büyük Patlama'dan sonraki ilk birkaç dakika içinde hidrojen ve helyum gibi basit elementler nükleer reaksiyonlar yoluyla oluşmaya başladı.

As the universe continued to cool and expand, atoms were able to combine, eventually forming stars and galaxies.

Evren soğumaya ve genişlemeye devam ettikçe, atomlar birleşerek sonunda yıldızları ve galaksileri oluşturdu.

Over billions of years, these stars created heavier elements through nuclear fusion, which were later dispersed when massive stars exploded as supernovae.

Milyarlarca yıl boyunca, bu yıldızlar nükleer füzyon yoluyla daha ağır elementler yarattı ve daha sonra büyük yıldızlar süpernova olarak patladığında bunlar dağıldı.

Evidence supporting the Big Bang theory includes the cosmic microwave background radiation, a faint glow detected throughout the universe that is thought to be the leftover heat from the early universe.

Büyük Patlama teorisini destekleyen kanıtlar arasında, evrenin her yerinde tespit edilen ve evrenin erken dönemlerinden kalan ısı olduğu düşünülen soluk bir parıltı olan kozmik mikrodalga arka plan radyasyonu yer almaktadır.

Additionally, observations of galaxies show that they are moving away from each other, indicating that the universe is still expanding.

Buna ek olarak, galaksilerin gözlemleri birbirlerinden uzaklaştıklarını göstermekte ve bu da evrenin hala genişlemekte olduğunu ortaya koymaktadır.

While many questions remain—such as what caused the Big Bang or what existed before it—advances in astrophysics and space observation continue to offer new insights into the origins of the cosmos.

Büyük Patlama'ya neyin sebep olduğu ya da ondan önce neyin var olduğu gibi pek çok soru varlığını sürdürürken, astrofizik ve uzay gözlemlerindeki ilerlemeler kozmosun kökenlerine dair yeni bilgiler sunmaya devam ediyor.