Main Menu

About the Test

The GED Science test contains questions of a variety of formats, including short answer questions. Unlike previous versions of the GED, you will need considerable knowledge about science topics. Also, you will need some skills that you use on other parts of the GED test, such as interpreting charts and graphs. Some problems will give you an onscreen calculator to help you do math.

The GED Science test has two main themes: Energy and Health and the Human Body. The flow of energy is present in all three topics of the test, and all three topics address the human body and the effects of the environment on it. In addition to the three topics of life science, physical science and earth and space science, you will also need to know the scientific process.

Here are some of the question types that may appear on the GED Science test:

Short answer: Short answer questions will be mixed with the other questions, unlike the constructed or extended responses on other test sections. Be thorough, but do not spend too much time on them.

Drop Down- Select the correct answer from a drop-down menu:

GED stands for General  Development

Multiple Choice- Select the correct answer from a list of choices:

Which of the following is **not** a section of the GED test:

- (•) social studies
- ( ) science
- ( ) health
- ( ) mathematical reasoning

Drag and Drop- Put these items in order by dragging and dropping them with your mouse to the table on the left

The Scientific Method

The scientific method is important in all branches of science. It is the process by which scientific research takes place. You should be familiar with how experiments are conducted and be able to explain how you would set up an experiment. Read the steps of the scientific method, and then try the practice problems.

Steps and Terms

Problem

The scientist starts with by asking a question. There must be a problem that they want to solve. Let's take the hypothetical problem of a scientist wondering if fertilizer will make their tomato plants grow taller.

Research

The scientist must then research to see what others have found to be the case. If a study has been done in the past, it does not mean that the scientist should stop. The conditions may be different than they were for previous studies and more data will help future scientists understand the subject.

Hypothesis

A hypothesis is what the scientist thinks will happen. It is an educated guess based on research. In the case of our scientist, the hypothesis could be: Adding fertilizer will make the tomato plants grow taller.

Experimentation

The scientist then conducts an experiment. She may put fertilizer on half of her tomatoes. Then she compares them to the other half to see if they grow taller.

Dependent and Independent Variables

In an experiment, there are two types of variable, or things that can be changed. The independent variable is what the scientist does. In this case, the independent variable is the addition of fertilizer. The dependent variable is the effect that the scientist observes. In this case the dependent variable is the height of the tomato plants.

Experiment and Control Groups

In an experiment there should be an experiment and a control group. The experiment group is the group that the scientist acts on, while the control group

does not receive the experiment and is used for comparison. In our experiment, the tomato plants that received fertilizer are the experiment group, while the ones that did not are the control group.

Analysis

After the experiment, the scientist must analyze the results. Was the hypothesis confirmed or rejected? Did the results support previous research?

Reporting

When reporting scientific findings, the scientist must include all details of the experiment and research that was done. Future scientists will use her reporting when researching for their own scientific problems. In our experiment, details like weather, sunlight, amount of water received, etc. are all important factors when reporting on the experiment.

Scientific Theory

After repeated experiments have proven a hypothesis, a scientific theory is established. That scientific theory is used to predict and explain hypotheses in other situations.

Life Science

Life Science makes up about 40% of the GED Science test. Options at the right are for The Human Body, Ecosystems, The Organization of Life and Heredity and Evolution. After reading all the sections, try some practice problems.

The Human Body

Human Body Systems

The systems of the human body include the nervous, muscular, skeletal, circulatory, respiratory, digestive, integumentary (the skin), urinary, reproductive, immune and endocrine systems. All the systems work together to allow the human body to carry out its functions.

Nervous System

The nervous system includes the brain, spinal chord and nerves. It coordinates all the actions of the body by transmitting signals throughout the body through nerve cells. Information received by the senses travels through nerves to the brain, and information from the brain travels through nerves to the muscles to tell the body to move. The brain also tells muscles to move that you may not have to think about, such as those that control breathing and heartbeat.

Muscular System

The muscular system allows the body to move after receiving signals from the nervous system. Your muscles also work with the skeletal system to make movements and maintain posture

Skeletal System

The skeletal system is made up of bones. It provides support and protection for the body and gives your body shape. The joints in the skeleton assist in movement. Your bones are also responsible for producing blood.

Circulatory System

The circulatory system consists of the heart, blood and blood vessels. Your blood transports oxygen and nutrients throughout the body. The heart acts as a pump to move the blood through the blood vessels. The circulatory system works closely with the respiratory system, which brings oxygen into the body.

Endocrine System

The endocrine system consists of glands that produce enzymes and hormones that affect your body's growth and response to certain information. The glands of the endocrine system also produce fluids used in digestion and reproduction.

Homeostasis

Homeostasis describes the body when its systems are stable. The body maintains its body temperature and levels of chemicals in the blood, like pH, are maintained.

Nutrients

Nutrients are the chemicals organisms need to live. Some examples of nutrients may be oxygen, water, carbohydrates, fats, proteins, and other vitamins found in food. If the supply of nutrients in the environment changes, some organisms may not survive.

Nutrition

Nutrition is the ability for an organism's body to get the nutrients it needs to live and be healthy. Food energy is measured in units of calories. Vitamins and minerals are other chemical compounds the body needs to live.

Disease

One change in an organism's environment that can limit survival is disease. Diseases in humans are often blood borne, which means that they can transmitted through bodily fluids, or airborne, which means they are transmitted through the air. Diseases have been prevented in recent years by increased sanitation and vaccination. Sanitation means preventing the spread of pathogens (or germs). Vaccines prevent disease by stimulating a body's immunity to a disease.

Ecosystems

Energy

All organisms need energy to function. They get energy by converting nutrients. Photosynthesis, respiration and fermentation are all examples of nutrients being converted to energy.

Photosynthesis

Plants take in Carbon Dioxide (CO_2) , Water (H_20) and photons from sunlight. These are converted to carbohydrates, which plants cells convert to energy, and oxygen, which is given off.

Respiration

Cellular Respiration is the process by which cells convert carbohydrates, like glucose ($C_6H_{12}0_6$) to energy. The body then uses the energy to carry out its functions.

Fermentation

Fermentation is carbohydrates being converted to gases or alcohol. Foods that are fermented may taste sour or contain alcohol.

Energy Pyramid

Energy in an ecosystem flows through a pyramid. Energy producers (like plants) are consumed by primary consumers (herbivores). Primary consumers are consumed by secondary consumers (carnivores). Secondary consumers are consumed by Tertiary consumers (carnivores who eat other carnivores). The primary consumers rely on there being enough producers to feed them. The secondary consumers rely on there being enough primary consumers to eat. Any disruption in the ecosystem can disrupt all levels of the pyramid.

Energy Flow in the Pyramid

Energy flows through the pyramid. Organisms take in energy through sunlight and producers and low-level consumers. An organism loses energy by giving off heat or by being consumed by higher-level consumers.

Food Web

The food web describes matter flowing through the ecosystem. Predators rely on prey to survive, and changes in population can affect other populations. Species that rely on each other are said to have **symbiosis.**

Carrying Capacity

The Carrying Capacity is the maximum number of a species that can survive in an ecosystem. The carrying capacity depends on habitat, water, food and other necessities available. Some woodpeckers are an example of a species with a low carrying capacity for its size. Because they are territorial and require hollowed trees to nest in, few of them can live in the same area of forest.

Disruption of Ecosystems

Disruption of ecosystems can hurt populations of species. Some examples of disruption include: invasive species, which are species that are introduced to an area and kill or crowd out the native species; flooding, which destroys habitat; desertification, which is the absence of water in an ecosystem; and any other disaster that kills species populations or leaves them without habitat.

Extinction

Disruption of ecosystems can lead to extinction. Extinction of a species is when no surviving members exist. Once a species is extinct, it can never be reproduced.

The Organization of Life

Cell Theory

The smallest unit of living things is the cell. All living things come from cells, and all parts of organisms are made of cells. Cells come from other cells.

Cell Structure

All cells have an outer membrane to regulate what can pass in and out of it. Cells also have small organs inside them that have different tasks, called organelles. Cells also have a nucleus, which contains chromosomes. The chromosomes contain information about he cell's genetic makeup.

Metabolism

Metabolism is the process by which cells turn nutrients into energy. Carbohydrates are turned to energy, which is then used to either carry out the cell's functions or to produce proteins.

Enzymes

Enzymes are chemical in a cell that act as catalysts for the metabolism process. A catalyst is a chemical that speeds up or assists a chemical reaction.

Specialized Cells

In the body, specialized cells carry out the tasks of the different body systems. A bone cell's primary task may be to provide rigid support. A nerve cell may transmit information through the body using electric pulses. A blood cell may carry nutrients to other cells through the blood.

Reproduction

Cells and single cell organisms reproduce through a process called mitosis. In most animals, sexual reproduction occurs, which means that cells from a male and female parent combine to form an offspring.

Mitosis

Mitosis is the process by which individual cells reproduce. First the chromosomes in the nucleus of the cell copy themselves. Then the nucleus splits into two nuclei. Then the rest of the cell divides and becomes two cells. Cells in the body are constantly reproducing to replace ones that have died.

Meiosis

Meiosis is a process similar to mitosis used to create cells used in sexual reproduction. The chromosomes in meiosis, however do not copy themselves. This creates cells with half the number of chromosomes. These cells combine with cells from the other parent to form a whole cell, called a zygote, which then reproduces to create an offspring.

Heredity and Evolution

Molecular Biology

Molecular biology is the study of the smallest units of life. It is the combination of chemistry and biology because it deals with the makeup of chemicals that make up living things. It focuses on DNA and the use of proteins.

Inheritance

Living things inherit traits from their parents. In sexual reproduction, an organism will have traits from both of its parents.

DNA and Chromosomes

DNA is the code that contains all of the unique information, or genes, about an organism that is inherited. DNA is contained on chromosomes that are in the nucleus of every cell in the organism.

Alleles

Alleles are different versions of a gene. Alleles can be either recessive or dominant. If an organism has both a recessive and dominant allele, the dominant allele is what will be shown. Punnett squares calculate the probability that an allele will be shown

Punnett Squares

Say we make a Punnett square for chicken feather color. "B" represents blue feathers, which is the dominant allele. "b" represents white feather, the recessive allele. If both parents are Bb, the both display the blue allele. Their offspring will then have a ¼ chance of being BB, a blue chicken with no chance of having a white offspring; a ¼ chance of it being bb, a white chicken; and a ½ chance of it being Bb, a blue chicken like its parents.

Genotypes and Phenotypes

Genotypes refer to the genetic makeup of an organism. In the chicken example above, Bb would be an example of a genotype. The phenotype is the observable trait, such as blue feathers.

Mutations

When DNA is damaged or an error is made in replicating chromosomes, mutations can occur. Mutations can result in traits that neither parent has

Epigenetics

The environment around a species can cause changes in the traits and genetic makeup of a species over time. The study of how a species' genetic makeup changes over time is called epigenetics.

Adaptation

Changes in a species' genetic makeup that is to suit it to the environment is called adaptation. Charles Darwin observed finches in the Galapagos Islands and noticed that they have different beaks based on what there is to eat on the island they are on. If they had to crack hard seeds, they developed thick, strong beaks. If they had to get seeds from deep in cones or husks, they developed thin beaks.

Common Ancestry

Over time, species like the finches mentioned above may become separate species. Since they started out as one species, the two new species have a common ancestor. All species have common ancestry and have developed into the species they are today. This process is called **evolution**

Cladograms

Cladograms show relationships between species. Similar species are shown on the same branches. Evolutionary trees are cladograms that show ancestors of a species

Selection Pressure

When a species is not well suited for its environment, it is pressured to adapt. In the example of the finches, if they only have hard seeds to eat, only the birds with strong beaks will survive long enough to reproduce.

Natural Selection

When the natural environment around force a species to adapt by only allowing those with desirable traits to reproduce, that is called natural selection.

Artificial Selection

When a species is bred to change genetic traits to become more desirable to others, this is called artificial selection. An example of this is livestock being bred to have larger offspring that produce more meat.

Speciation

Speciation occurs when a new species is created because it had adapted and separated itself from related species. An example of this a variation of the hawthorn fly called the apple maggot fly. The apple maggot fly lives in North America and only

eats apples, unlike its ancestor that only eats hawthorns. Apple maggot flies could not have always been in North America because apples were introduced by European immigrants.

Physical Science

Physical science makes up about 40% of the test. Choose from the sections at the right for Flow of Energy, Physics or Chemistry. After reading the sections, try some practice problems.

Flow of Energy

Heat

Heat is the flow of energy from a cold object to a warmer one. Heat can be transferred by convection, conduction or radiation. Convection is hot gas or liquid rising above cold gas or liquid because it is less dense. Conduction is the transfer of heat through direct contact. Radiation is heat being emitted from a hot object or a reaction. If you feel the heat coming off a fire, you experience radiation. If you hold your hand above the fire, you will feel additional heat through convection. If you touch a hot object, you will feel even more heat through conduction.

Endothermic and Exothermic Reactions

Endothermic reactions are reactions that absorb heat from their surroundings, like chemicals that react when heated. Exothermic reactions are reactions that give off heat, like those that combust or catch fire when combined.

Kinetic and Potential Energy

Kinetic energy is the energy that an object has when it is in motion. Potential energy is the energy that an object has because of what it is capable of doing. If an object is in a high place, it has potential energy. As it falls, it loses potential energy at the same rate that it gains kinetic energy. This is called conservation of energy.

Chemical Energy

Chemical energy is potential energy that can be converted to other types of energy by a chemical reaction. The chemical energy of food can be converted to kinetic energy (movement) by cells in the body. Combustible materials contain chemical energy that is given off when they burn.

Mechanical Energy

Mechanical energy is the sum of kinetic and potential energy. Because of the law of conservation of energy, mechanical energy of an object remains constant as it moves. A pendulum has potential energy when it swings upward. It then has kinetic energy when it swings downward and is moving fast. It always has the same mechanical energy.

Sources of Energy

The environment contains many sources of energy that people can harness to create electricity or do things.

The Sun

Heat radiates from the sun and is absorbed in solar panels. It is an example of a method of energy production that reduces pollution. It is sustainable, but relies on there being sunlight.

Fossil Fuels

Oil, Coal and Natural Gas all contain chemical energy. They are mined or drilled from the Earth and burnt, producing energy. Fossil fuels may not be sustainable because there is a finite amount of them. They also produce pollution.

Nuclear Energy

In a nuclear reactor, splitting an atom gives off heat in a reaction and the energy is harnessed. Nuclear energy is sustainable, but does produce some nuclear waste. The major reason nuclear energy is not more widespread is because of the threat of accidents, like the ones at Chernobyl (1986) and Fukushima (2011).

Waves

Waves transfer energy. Electromagnetic waves transfer energy by vibration of electric and magnetic fields. Water waves transfer energy by moving particles of water. Sound waves are movement of particles transmitting sound. A wave has a wavelength, or the distance between waves. Amplitude is the height of a wave. Frequency is how many waves occur in a time frame. Higher wavelength means lower frequency.

Electromagnetic Radiation

Electromagnetic energy is transmitted in waves. The electromagnetic spectrum shows waves of varying wavelength. The higher the frequency (lower wavelength) the more energy a wave can transmit. At the high energy end of the spectrum are gamma rays: energy traveling through space. At the low energy end of the

spectrum are TV and radio waves that pass through the air around us unnoticed. Only a small portion of the spectrum is light waves visible to us.

Physics

Speed

Speed is the distance an object travels over a period of time. Speed is written as a ratio. In physics, scientists typically use a ratio of meters per second (m/s). In your car, you probably use a ratio of miles per hour to measure speed.

Velocity

Velocity is a measure of speed moved in a particular direction. If a measurement of speed was in meters per second, a measurement of velocity is in meters per second north.

Acceleration

Acceleration is a measure of how much velocity is increasing. It is written as a ratio of distance divided by time squared. Usually meters per second squared (m/s^2) is used

Momentum

Momentum is the mass of an object times the velocity. A large object has more momentum than a small one moving at the same velocity.

Collisions

Collisions are a transfer of momentum. When objects in motion collide, a change in momentum of one object is met by a change in momentum of the other object.

Force

Force is the amount of push or pull an object has when it interacts with another object. The formula for calculating force is mass times acceleration (F=ma).

Newton's Laws of Motion

Physicist Isaac Newton defined three laws for motion. 1. Objects in motion stay in motion unless an external force is applied. This is also called the law of inertia. If you roll a ball on the ground, it will eventually stop rolling because gravity is pulling it down. In space, without gravity, a moving object continues to move forever. 2. Force equals mass times acceleration. 3. Every action has an equal and opposite reaction.

Gravity

All physical bodies attract each other. The more mass a body has, the more gravity it may have. The Earth is a large enough body that it has gravity. Objects on Earth have weight and fall to the Earth because of gravity. All falling objects on Earth accelerate toward the ground at the same rate, 9.8 m/s^2. Physicist Galileo demonstrated that all objects fall at the same rate by dropping two balls of different mass from the Leaning Tower of Pisa in Italy.

Mass and Weight

Mass and weight are tow measures that are often confused. Mass is a measure of how much matter makes up an object, while weight is a measure of how much force gravity is putting the object. On Earth, mass is relative to weight: an object has a certain mass and weight. If that object is taken to space and free of gravity, it would have the same mass, but it would lack weight.

Work

Work is measured when a force acts on a body and moves, or displaces, it. Work is measured in joules. The formula for work is force times displacement (W=fd). If a baseball player throws a ball, he exerts force on it and he moves it, so a measurable amount of work has been done. If a person pushes against a brick wall and does not move it, they have done no work, even if they get tired.

Simple Machines

Simple machines are machines that allow work to be done more easily by changing or redirecting force. There are six classic simple machines: The lever, wheel and axle, pulley, inclined plane, screw and wedge.

Mechanical Advantage

Mechanical advantage is a measure of the amount force is increased by using a tool, such as one of the simple machines.

Chemistry

Structure of Matter

The smallest unit of matter is the atom. Atoms consist of a nucleus with protons and neutrons, surrounded by a field of electrons. Individual atoms are all one of the elements of the periodic table. Atoms of elements group together to form molecules of compounds.

States of Matter

Matter can take the form of a solid, liquid, gas or plasma. States change when the temperature changes. As states of matter change from cold to hot, molecules get further apart and move around more easily. Matter also becomes less dense.

Density

Density is the amount of mass a substance has per its volume (D=m/V). In liquid or gas form, less dense substances float on top of more dense substances.

Chemical Reactions

Chemical reactions are when two or more substances come into contact and their molecular structure is changed to create new substances. Chemicals and their reactions are written using chemical abbreviations.

Conservation of Mass

In a chemical reaction, the mass of the individual elements involved does not change. Nothing is wasted and nothing new appears, though some energy may be given off. This is called the law of conservation of mass.

Chemical Equations

Chemical equations are written using abbreviations for the elements and molecules involved. Take this example: $2HCl + 2Na \rightarrow 2NaCl + H_2$. In this reaction, two molecules of hydrogen chloride (shown as HCl, meaning each molecule has one atom of hydrogen, H, and one of chlorine) reacts with two molecules of sodium (Na) to form 2 molecules of sodium chloride (or salt, NaCl) and a molecule containing two atoms of hydrogen (H). The same number of Chlorine, Sodium and Hydrogen atoms exist on each side of the equation.

Solutions

Solubility is the ability for a substance (the solute) to dissolve into another substance (the solvent). Once dissolved a solution is formed. Increasing the heat of the solvent allows more of the solute to dissolve. For example, if you want to dissolve sugar in tea, more sugar will dissolve if the tea is hot.

Saturation

Saturation occurs when a solution has the maximum amount of solute dissolved in it.

Earth and Space Science

Earth and Space Science makes up about 20% of the test. Choose from Earth's Systems or Cosmos at the right. After reading both sections, try some practice problems.

Earth's Systems

Cycle of Matter

Matter cycles through an ecosystem. In the water cycle, heat causes water to evaporate into the atmosphere. Water then cools and falls from the atmosphere as precipitation. Other forms of matter also have cycles that affect living things.

Fossil Fuels

Burning fossil fuels can release nitrogen oxide (NO_2) into the atmosphere. Water washes excess nitrogen oxide into bodies of water, where it can deplete oxygen levels and hurt wildlife. Other chemicals released are hydrocarbons and sulfur oxides. Carbon dioxide leads to the greenhouse effect and global warming.

Earthquakes

Earthquakes are seismic waves caused by the release of energy in the Earth's crust. The scale used to measure the severity of earthquakes is called the Richter scale. Areas prone to earthquakes have special building practices.

Hurricanes

Hurricanes, also called severe tropical cyclones, are low-pressure, spiral-shaped thunderstorms. They can cause severe rains, flooding, wind damage, high waves and storm surges. Building levees can mitigate damage from hurricanes.

Renewable Resources

Renewable energy sources will not be depleted. Wind, solar, geothermal (heat from deep underground) and biomass (burning plant material and animal waste) energy are all renewable.

Non-renewable Resources

Fossil fuels like coal, oil and gas are non-renewable resources because there is a finite amount of them in the Earth. They take a very long time to develop, and are being used at a faster rate. As non-renewable resources are depleted, they become more expensive and less practical to use for energy.

Sustainability

The ability for people to maintain their way of life is called sustainability. Using renewable resources is sustainable because they will not be used up.

Earth's Atmosphere

Earth's atmosphere is divided into five layers. The troposphere is the closest layer of the atmosphere, and where most weather takes place. The stratosphere is next and it is the highest level jets can reach and contains the ozone layer. The third layer is the mesosphere, which is the coldest place on Earth and too high for jets and too low for satellites. The thermosphere is the fourth layer and has very low air pressure and high temperatures with no water vapor. The fifth layer is the exosphere, which merges with space and is where most satellites orbit.

Gases in the Atmosphere

The Earth's atmosphere is about 78% nitrogen and 20% oxygen, with the rest being a combination of many other gases.

Climate Change

Increased carbon dioxide in the atmosphere can trap more radiated heat from the Sun in the atmosphere. Global warming could cause changes in weather, food production and ocean levels.

Oceans

Oceans are bodies of salt water that contain most of Earth's water. Ocean currents are large movements of water in the ocean. Wildlife travel on ocean currents, and ocean currents are the reason the ocean may feel warmer or colder

Tides

Tides in the oceans are caused by the gravitational pull of the Moon. When the moon is over the ocean, its gravity pulls the water toward it, causing it to recede from the shore in a low tide.

Coral Reefs

Many organisms live in the oceans. One of the places with the greatest diversity of ocean life is a coral reef. Coral reefs are giant structures made of calcium secreted by corals, a type of underwater invertebrate. Coral reefs provide shelter for fish and other creatures.

Earth's Interior

The interior of the Earth has four layers. The crust is the outer layer that we live on. It is the thinnest layer, but the only layer most people ever see. The mantle is the next layer; it is a thick layer of solid rock. The outer core is a layer of very hot liquid. The inner core is the very dense innermost layer.

Earthquakes and Volcanoes

The Earth's crust is made up of plates called tectonic plates. Where the plates collide, mountains and rifts are formed. Earthquakes are caused by the energy released when two plates rub together, collide or move apart. Volcanoes are caused by plates moving apart or colliding causing the release of gas and molten material from the Earth's core. The location of the edges of the plates is clear on maps of the locations of earthquakes

Major Landforms

Some of the major landforms on the Earth are mountains, the continental shelf and ocean basins. The continental shelf is the flat piece of and that makes up the continents and the shallow water that surrounds them. The ocean basin is the deep part that makes up most of the oceans.

Cosmos

Development of the Universe

Over 13 billion years ago, the universe began to expand out from a center point following an explosion. This model is called the Big Bang Theory.

Galaxies

Galaxies are massive groups of stellar, or star-like, objects. Our galaxy is the Milky Way, a spiral-shaped galaxy similar to the one pictured. We have no pictures of the entire Milky Way because we are part of it, but it is sometimes visible in the night sky as a large streak. Our solar system is on one of the arms of the spiral.

Stars

Starts are massive spheres of hot plasma. The Sun is the star at the center of our solar system.

Constellations

Groups of stars in the sky are called constellations. Constellations are used by astronomers to identify and keep track of stars.

Solar Systems

Stars are very large and have a gravitational pull that causes planets to revolve around them. A star with planets around it is called a solar system.

Star Sequence

A star goes through several stages in its life. It starts out as a protostar: gravitational instability causes a star to form, which takes about 10-15 million years. The second stage is the main sequence, which is about 90% of a stars life. Main sequence stars convert hydrogen to helium. The third stage is the red giant stage. After the hydrogen is depleted, the radius of the star increases, but the mass decreases and the star begins burning helium. The fourth stage is the red supergiant. The star now burns neon, silicon, carbon and oxygen. The fifth stage is collapse. The core of the star suddenly collapses into a white dwarf and a supernova is created that sends out a right shockwave. Larger stars can form a black hole after collapse.

The Sun

The Sun is the star at the center of our solar system. It is a main sequence star, meaning it gives off heat from a constant nuclear reaction of hydrogen being converted to helium.

Planets of our Solar System

Our solar system has eight planets: Mercury, Venus, Earth, Jupiter, Saturn, Uranus, and Neptune. The first four are smaller planets made of solid material and the outer four are large, gaseous planets. The solar system also has asteroids and several dwarf planets that orbit as well.

Moons

Many planets have moons. Our planet has a moon that orbits it. The Moon is kept in rotation around the Earth by the Earth's gravity, and the Moon affects the Earth by reflecting the sun's light and causing tides.

Comets and Asteroids

Comets and asteroids are objects passing through space. Asteroids are smaller than planets and are usually in the inner part of the solar system. Comets are icy asteroids that occasionally pass close to the sun and appear to be bright or have a tail.

Earth's Motion

The Earth revolves around the Sun, and takes one year for a full revolution. At the same time, the axis of the Earth tilts, causing changes in seasons. When the

Northern Hemisphere is tilted toward the sun, they experience summer, while the Southern Hemisphere experiences winter. The Earth also rotates, causing night on the part not facing the sun and day on the part facing it. One rotation takes 24 hours.

Eclipses

The Earth, Moon and Sun being in perfect alignment cause eclipses. A lunar eclipse is the Earth being between the Sun and Moon causing the Moon to be blacked out by Earth's shadow. A solar eclipse is caused by the Sun being blocked by the Moon

Age of the Earth

The Earth is about 4.54 billion years old according to radiometric dating. Radiometric dating measures the amount of decay in radioactive materials. It is also used to date fossils and landforms like mountains.