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The frequencies of blood types vary in populations around the world. For example, the frequencies of the A, B, AB, and O blood types differ in three US populations as shown below. Label the following parts of the human Skeletal system on the diagram. Provide the labels for the indicated parts on the diagrams of a longitudinal section and cross section of bone below. Some labels are used more than once. Provide the labels for the structures in a neuron shown to the left. In the diagram to the left, provide the labels for the structures involved in the reflex act when a person steps on a tack and jerks their leg away. Provide the labels for the diagram on the left below and provide descriptions of the functions of each structure on the blank lines. Provide the labels for the indicated parts on the diagram of an eye. Provide the labels for the indicated parts on the diagram of an ear. Inflammation of the membranes surrounding brain and spinal cord 3. Most simple structural component of the nervous unit. Provide the labels for the indicated parts on the diagram of the endocrine system. For the physiological effects listed below, provide the name of the hormone responsible. Provide the labels for the indicated parts on the diagram of the male reproductive system. Provide the labels for the indicated parts on the diagram of the female reproductive system. Provide the labels for the indicated parts on the diagram of the baby in its mommy. Complete the full reading passage by using the word bank that is provided for you. Example clue: Endocrine gland at base of brain. 4. Hormone that causes follicle to mature. 6. At the base of brain, gland that interacts with pituitary. 7. Hormone produced by thyroid. 9. Pituitary hormone that targets adrenal cortex. The digestive system is the part of your body that changes the food you eat, like me Goldie the Delicious Apple, into the energy you need every day for living. The food you eat is digested and the parts of your body that are responsible for this abreaks down food into useable energy for your body. Which part of the organ can stretch and get bigger? Healthy teeth are needed for chewing food and preparing it for processed. Do some research and write a short report describing three ways to keep your teeth healthy. What's in there anyway? No, there is not a word bank. Finish all those parts of the digestive system. If you have already studied about the digestive system you are familiar with the path that food takes through your body. You already understand that food needs to be chewed in order to prepare it for processing by the stomach and how the stomach adds acid and churns food to convert it to a form that can be absorbed into the body through the intestines. The proteins, carbohydrates, and fats from the food that was eaten travels to cells throughout the body in what? A doctor who specializes in diseases and problems of the digestive tract is called a gastroenterologist. Would you like to be a gastroenterologist? Explain why or why not. The endocrine system is the master controller of all hormone production in the body. We all know that hormones kick in at puberty and make the lives of teens either wonderful or miserable or both at the same time! Which part of the endocrine system plays a major part in growth? A few children do not grow to the same height as average children; they are very short. If doctors give them growth hormone they will grow taller over time. Do you think doctors should give children growth hormone to make them taller? They are set out for you to use as a diagram. Your nervous system is made up of your brain, the spinal cord and a large branching network of nerves that spread out from the spinal cord. The branching network of nerves spread from what place? Explain how signals travel back and forth between the brain and muscles so that the muscles move properly. They are all set out for you. Otto was gently tickled and cleaned of dust and dirt by cilia, the hairs inside your nose and then he passed through the pharynx (throat). Which part of the respiratory organs is strengthened by cartilage? A bronchial tube and all the bronchioles inside a lung are called a bronchial tree. Explain why this is a good metaphor. Label all the important parts. The liquid that you pee is called urine. Your body is constantly making urine but instead of getting rid of it as it's produced, urine is stored in a flexible sac in your lower abdomen called the bladder. How many kidneys does a human have? Do some research and find out what the recommended amount of water to drink every day is. How does your body filter waste out of the blood? Mostly the parts of a kidney. Label all of the branches. Your skeleton is the framework of your body. The skeleton provides structural strength so you can sit, stand and walk plus some parts of your skeleton are designed to protect important organs. Which nutrient is especially needed to keep bones strong? You and your grandfather each break a leg in a skiing accident. Whose leg will probably heal faster and why? Everything is labelled for you. Put your hand up in there. All the major parts are already labelled for you, but you can go into further detail. A good way to understand the positioning of the skeleton. A side view of your arm to shoulder. Body builders are athletes who try to develop their muscles to the utmost and are judged on their muscle formation during a competition. Which type of muscles are involuntary muscles? Select a part of the body, like arm, shoulder, leg or neck. Do some research and name the skeletal muscles associated with that part of the body. Yes, he is the picture of health. Where are you going with all that muscle? Blood carries vital oxygen to all parts of your body. Oxygenated blood travels through flexible tubes in your body called arteries. In order to reach every cell in the body, arteries branch into smaller tubes called arterioles and at the end of arterioles are capillaries. Describe how each tissue or organ listed below interacts with blood. What part of your body brings deoxygenated blood back from your brain? Explain how your body makes new blood to replace blood you lose from having a blood test or a cut (or a vampire bite!). The main organ of the circulatory system is the heart. The heart is a muscle that serves as the pump that moves or circulates the blood throughout the body. What is the function of platelets? Which part of the circulatory system looks blue under the skin? List three types of blood cells and explain the function of each. The main review worksheet that you will need. Label each type of tooth. There is no help with this one. Place the following phrases that are associated with the skeleton on the concept map below. Word Bank: Radius, Humerus, Ulna, Phalange, Clavicle Go it alone! Label the parts of the brain. If there were a bank it would be- Word Bank: Cerebellum, Spinal Cord, Cerebrum, Medulla, Midbrain Label the organs of the digestive tract. Word Bank: Large Intestine, Pancreas, Liver, Small Intestine, Gall Bladder, Stomach, Esophagus Use the bank to label all of the parts of the heart correctly. Word Bank: Left Atrium, Pulmonary Vein, Right Ventricle, Pulmonary Artery, Right Atrium, Left Ventricle. Label the parts of the human heart without any help at all. Order the letters to follow the blood flow from W to P. Word Bank Bronchus Trachea Diaphragm Nose Lung Mouth Bronchiole Label the parts of the human respiratory system. Word Bank: Fibula, Pelvis, Skull, Humerus, Sternum, Femur, Rib, Tibia, Rib, Vertebra Label the parts of the human skeleton. Label the liver, esophagus, large intestine, mouth, small intestine, gallbladder, pancreas, stomach, anus and appendix. Label the organs that help with the chemical and physical changes of fat. Color these organs green. What is the importance of the digestive system? The diagram you will need for this project. The diagram you will need for this project. The diagram you will need for this project. The diagram you will need for this project. The diagram you will need for this project. Map out those muscles. The term skeletal system refers collectively to all the bones, tendons, ligaments, and cartilage in a body. Tendons attach bones to muscles. Ligaments attach bones to other bones. What part of the skeletal system produces red and white blood cells? All of the muscles in the human body are known collectively as the muscular system. There are more than 650 muscles in the human body. Muscles are found underneath of our skin, in some organs, and wrapped around all of our bones. Muscles are what enable the human body to move. Cardiac muscles, which are the ones in our heart, perform their function without us having to consciously tell them to do it. Collectively, the heart, blood, and blood vessels make up the body's cardiovascular system. Blood picks up nutrients from the food we eat and oxygen from our lungs and carries those things to individual cells, where they are put to use. The heart is located in the left side of your chest, inside of your rib cage. The heart is composed largely of muscle that expands and contracts to pump blood through the body. Our bodies use the food we eat for maintenance and construction, as well as to provide us with energy to do the things we do. However, the chemical energy that is stored in foods isn't accessible to the body in the form that we eat it. Before we can use the energy that is stored in the chemical bonds of our foods to power our bodies, we need to put some energy into those foods in order to convert them into a form our bodies can use. What is the name of the flap the keeps food from getting into our windpipe when we swallow? The brain, the spinal cord, and the nerve pathways all over the body are collectively called the nervous system. There are two parts to the nervous system. The central nervous system consists of the brain and the spinal cord. The peripheral nervous system are all the rest of the nerves located everywhere else. The peripheral nervous system includes two main sets of nerves. The autonomous nervous system works without us having to think about what is happening. The respiratory system in the human body is responsible for bringing oxygen into the body and expelling carbon dioxide out of the body. The nose is not just a place for air to come into the body. Nasal cavities contain both hair and mucus that filter dust and other particles out of the air so that these things don't get into our lungs. The endocrine system is a group of glands in the human body that produce hormones. Hormones are chemicals that carry information and instructions between cells. Which of the following is part of both the endocrine and digestive systems? When you eat, your digestive system breaks down the food into chemicals that your body can use for energy. This process produces both solid and liquid waste. When blood passes through the kidneys, water, protein, glucose, and other nutrients return to the bloodstream, while the waste is filtered out. This waste is in the form of urine, and it contains water, urea (waste resulting from the breakdown of proteins), urochrome (a pigmented blood product that colors urine yellow), salts, creatinine (waste resulting from the normal breakdown of muscle), byproducts of bile from the liver, and ammonia. The immune system is the body's defense system against disease. The main organs making up the immune system are the spleen, lymph nodes, thymus, and bone marrow. Proper immune function requires that the immune system know which cells to attack and which to leave alone. Specific antigens require specific antibodies, so antibodies only attack the cells they are supposed to attack and leave other cells alone. Skin, hair, nails, and exocrine glands are collectively known as the integumentary system. Exocrine glands are glands that create and release substances through the skin, rather than through the blood. Where on the body does our skin have the most receptor cells? Our bodies are super cool! There are so many things going on in it that we still don't fully understand to this day. The mouth produces nearly one liter of saliva every day. Did you know that you shed nearly ten pounds of skin cells every year? In your lifetime, your heart will beat just about three billion (with a B) times. Some more numbers for you... The human body is made up of two-hundred and six bones working in concert with your three-hundred and twenty pairs of muscles. The top half of the body, the head, houses the control center organ of the body called the brain. The center part of the body is often referred to as the core and houses most major organ systems. The arms and legs that build off of the core are needed for movement and doing work. A human body, like a machine, is made of numerous structures that work together to perform a specific function. These structures are categorized as cells, tissues, organs, and organ systems. The systems of the human body include the digestive, nervous, and other major structures that work interdependently to ensure proper functioning. Each system is an organization of various organs that function as a unit to sustain life. The Digestive System Also known as the gastrointestinal system (GI), the digestive system is composed of the following: Esophagus Stomach Duodenum Intestines These organs work together to ensure food is broken down chemically for absorption into the bloodstream. The blood transports the absorbed food to the cells for conversion into the energy we use for everyday activities. It also eliminates undigested food in the form of fecal matter. The Cardiovascular/Circulatory System The circulatory system is the channel through which oxygen, nutrients, hormones, and other essential substances are distributed throughout the body. Distribution is achieved by the blood, which is pumped through the blood vessels by the heart. Consequently, it is responsible for removing waste products from body cells. The Respiratory System Cells require oxygen for energy production, without which the body will die within minutes. The respiratory system ensures the intake of oxygen (inhalation) and diffusion into the bloodstream for conversion into energy. It also ensures the removal of carbon dioxide from the body (exhalation). The organs responsible for these functions are the following: Pharynx (windpipe) Lungs Bronchi Air sacs The Reproductive System It is responsible for the creation of offspring in humans via sexual reproduction. The reproductive organs in males and females differ. Besides the production of sex cells, as in males, the female reproductive organs ensure the growth and development of the offspring. It's through reproduction that the continuity of the human species is guaranteed. The Nervous System We perceive sensations and emotions, and respond to environmental changes, thanks to our nervous system. It transmits signals from the brain to the rest of the body and vice versa through a network of nerves attached to the spinal cord. The Excretory/Urinary System This is the body's drainage mechanism, and it works to filter blood and remove waste metabolic products in the form of urine. The mechanism consists of: Kidneys Ureter Urethra Urinary bladder It's also responsible for controlling the blood's water and salt concentration and maintaining its PH at normal. The Musculoskeletal System This is an organization of bones, muscles, and tendons that provide the body with its general framework. It's responsible for support, protection of vital organs, body posture, and movement. The bones manufacture blood cells and store essential minerals like calcium. The Integumentary System Also called the exocrine system, the integumentary system works to protect our inner organs from the environment. It consists of: It also plays a significant role in regulating water and body temperature, excretion of sweat, and vitamin D synthesis. The Endocrine System It is composed of various glands that secrete hormones that control most body functions. The hormones are responsible for processes like: The menstrual cycle Growth Blood sugar regulation Cell metabolism and other similar processes The Immune and Lymphatic Systems These two systems complement each other to provide immunity to the body. The lymphatic system plays a role in the production and cleansing of the lymph, a fluid that houses the immune system's lymphocytes, otherwise known as white blood cells. It also drains excess lymph fluid from tissues, returning It to the circulatory system. On the other hand, the immune system comprises: White blood cells Antibodies Bone marrow Spleen Thymus These all work with the lymphatic system to fight infections. In Summary The human body is composed of a network of systems that are composed of organs and tissues that work as a unit to execute a complex function. The functionality of these systems is vital for the sustainability of human life. Crystals are beautiful and people have long been fascinated by their wide variety of shapes. In this exercise, you will make your own crystal shapes. One of the most important properties used to identify and classify a mineral is its hardness. The Mohs hardness scale measures a mineral's hardness using a simple scratch test to see what the mineral can scratch and be scratched by. Minerals can be identified by carefully observing their physical characteristics. You will use all of the descriptions to determine the type of mineral. There are three main types of rocks; igneous, metamorphic, and sedimentary. Use these three terms to answer the questions on this page. Describes brightness of the light reflected from a mineral's surface. Rocks can change from one type into another due to heat, pressure, and weathering. Soil and earth can have several layers and each has different structures and organisms. Look at the diagram of a soil profile pictured below. Move those rocks around in one spot. This is the process that transforms rcoks from one form to another. Complete the rock cycle below using the word bank. Erosion is the washing away of soil and rocks. Erosion can be minimized by plant life. The roots of the plants grow deep into the soil and prevent movement on the surface. Rocks are classified according to how they are formed. Igneous is formed when hot molten forms cools and hardens. Sedimentary rocks are formed when very small pieces of it settle and harden. Metamorphic types are formed by adding heat and pressure to igneous and sedimentary forms. What is the difference between rocks and minerals? What does each picture tell us about how rock is formed? Identify the type of igneous rock that belongs in each box. Draw a picture of 3 igneous rocks and explain how each one is used. Identify the type of metamorphic rock that belongs in each box. These are all formed under high levels of heat. What are metamorphic rocks and how are they formed? Choose 3 rocks from the provided collection. Make sure each it looks completely different. Find how hard your rock is by performing the following tests. Is this rock igneous, metamorphic, or sedimentary? Used what you have learned to determine this. Place rock in a cup of vinegar. Describe what happens. You will have a series thoughts to better udnerstand what you are looking at. You will answer questions such as: Is the rock magnetic? Identify the type of sedimentary rock that belongs in each box. What are sedimentary rocks and how are they formed? You see, the Earth is pretty awesome. From ordinary volcanic rocks like granite to priceless jewels used in jewelry, it is home to various rocks and minerals that are much more complicated than meets the eye. The different types of rocks and minerals are sedimentary, igneous, and metamorphic. These rocks form under specific conditions such as melting, cooling, erosion, compaction, or deformation. On the other hand, minerals can be divided into metallic and non-metallic based on their composition. How do we differentiate rocks and minerals, and how do we classify them? This article will help you discover the difference between a rock and a mineral and closely examine their various types. Minerals vs. Rocks A mineral is a substance with unique chemical and physical properties, composition, and structure, whereas a rock is a solid collection of various minerals. Rocks are typically composed of two or more minerals combined through various geological processes. So, minerals are the building blocks of rocks. The Different Types of Rocks The three types of rock - sedimentary, igneous, and metamorphic are classified based on their physical properties, chemistry, and origin. Igneous Molten rock (lava or magma) crystallizes and hardens to produce igneous rocks. The melt starts below the Earth near hot areas or active plate borders before rising to the surface. Because heat transforms minerals into igneous rocks, these formations are usually very dense and shiny. Sedimentary Sedimentary rocks are broken pieces of other rocks that have been worn down by erosion and weathering. As these small pieces find new homes in new places, they settle in and pack down to form a solid stone with many layers. These rocks often contain sand, silt, dead plants, and animal bones. Metamorphic Other types of rocks transform into metamorphic rocks due to high heat or pressure, or more typically, a combination of both. Check out this article from the American Museum of Natural History to learn more about the three types of rocks and how they look. How Rocks Are Formed: The Rock Cycle Any rock may transform into any other type of rock, though this process typically takes a long time. Some transformations take place above or below the Earth's surface. The rock cycle refers to the sequence of natural processes transforming a rock. Rock can change through three major processes: Cooling and Crystallization. The Earth's interior is hot enough to produce magma or gooey molten rock. As this magma makes its way back up to the earths crust, it cools, forming the crystalline structures that make up igneous rocks. Weathering and Erosion. Rocks erode over time as wind, ice, plants, and animals wear them down. These influences can eventually split rocks into sediment - which looks like dirt or sand. Then, glaciers, wind, and moving water move these bits from one place to another in a process called erosion. Sedimentation. At some point, the sediments are dropped or deposited. This process is called sedimentation. The sediments may then be pressed and cemented together, forming sedimentary rock. Metamorphism. Metamorphism is the transformation within a body of rock due to high pressure and high temperature. As pressure and temperature rise, new metamorphic rocks can form from old ones. The Different Types of Minerals Now that we know about the different types of rocks and the Rock Cycle let's learn about the different kinds of minerals. Minerals are classified based on their crystal form and chemistry. They are divided into two types: metallic and non-metallic. Metallic Minerals Metallic minerals are minerals composed of at least one metal. These often occur as mineral deposits and are excellent conductors of heat and electricity. Iron, copper, gold, silver, etc., are some common metallic minerals. Non-Metallic Minerals Non-metallic minerals are those minerals that do not contain any metals. Diamonds, mica, salt, potash, clay, and dolomite are non-metallic minerals. Since these minerals dont include metal, they are usually more brittle and breakable than metallic minerals. Conclusion There are three categories of rocks based on their origin and characteristics: sedimentary, igneous, and metamorphic, and two types of minerals based on their composition: metallic and non-metallic. However, there is still much to learn about rocks and minerals. Going outside or looking at images of different rocks and minerals is the best way to learn more about this fascinating topic. Just take a second look at the rocks around you, and youll open your eyes to the incredible variety in the natural world! 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