Banking begins with the first prototype banks of merchants of the ancient world, which made grain loans to farmers and traders who carried goods between cities. This began around 2000 BC in Assyria and Babylonia. Later, in ancient Greece and during the Roman Empire, lenders based in temples made loans and added two important innovations: they accepted deposits and changed money. Archaeology from this period in ancient China and India also shows evidence of money lending activity.

Artifacts and structures suggest sport in China as early as 2000 BC. Gymnastics appears to have been popular in China's ancient past. Monuments to the Pharaohs indicate that a number of sports, including swimming and fishing, were well-developed and regulated several thousands of years ago in ancient Egypt. Other Egyptian sports included javelin throwing, high jump, and wrestling. Ancient Persian sports such as the traditional Iranian martial art of Zourkhaneh had a close connection to warfare skills. Among other sports that originate in ancient Persia are polo and jousting.

Esports tournaments are almost always physical events in which occur in front of a live audience. The tournament may be part of a larger gathering, such as Dreamhack, or the competition may be the entirety of the event, like the World Cyber Games. Competitions take several formats, but the most common are single or double elimination, sometimes hybridized with group stage. Competitions usually have referees or officials to monitor for cheating.

In contrast, artificial weather technologies do not currently exist. But as they are developed, the importance of their potential applications rises rapidly. For example, the anticipated proliferation of surveillance technologies in the future will make the ability to deny surveillance increasingly valuable. In such an environment, clouds made of smart particles such as described in chapter 4 could provide a premium capability.

Bird migration is the regular seasonal movement, often north and south along a flyway, between breeding and wintering grounds. Many species of bird migrate. Migration carries high costs in predation and mortality, including from hunting by humans, and is driven primarily by availability of food. It occurs mainly in the northern hemisphere, where birds are funnelled on to specific routes by natural barriers such as the Mediterranean Sea or the Caribbean Sea.

Traditionally, historians have recorded events of the past, either in writing or by passing on an oral tradition, and have attempted to answer historical questions through the study of written documents and oral accounts. From the beginning, historians have also used such sources as monuments, inscriptions, and pictures. In general, the sources of historical knowledge can be separated into three categories: what is written, what is said, and what is physically preserved, and historians often consult all three. But writing is the marker that separates history from what comes before.

According to Lai, “the learning environment is a complex system where the interplay and interactions of many things impact the outcome of learning.” When technology is brought into an educational setting, the pedagogical setting changes in that technology-driven teaching can change the entire meaning of an activity without adequate research validation. If technology monopolizes an activity, students can begin to develop the sense that “life would scarcely be thinkable without technology.

X-rays can be generated by an X-ray tube, a vacuum tube that uses a high voltage to accelerate the electrons released by a hot cathode to a high velocity. The high velocity electrons collide with a metal target, the anode, creating the X-rays. In medical X-ray tubes the target is usually tungsten or a more crack-resistant alloy of rhenium (5%) and tungsten (95%), but sometimes molybdenum for more specialized applications, such as when softer X-rays are needed as in mammography. In crystallography, a copper target is most common, with cobalt often being used when fluorescence from iron content in the sample might otherwise present a problem.

"Continents" may be defined differently for specific purposes. The Biodiversity Information Standards organization has developed the World Geographical Scheme for Recording Plant Distributions, used in many international plant databases. This scheme divides the world into nine "botanical continents". Some match the traditional geographical continents, but some differ significantly. Thus the Americas are divided between Northern America (Mexico northwards) and Southern America (Central America and the Caribbean southwards) rather than between North America and South America.

In modern time there has been huge reductions to the barriers of global competition in the banking industry. Increases in telecommunications and other financial technologies, such as Bloomberg, have allowed banks to extend their reach all over the world, since they no longer have to be near customers to manage both their finances and their risk. The growth in cross-border activities has also increased the demand for banks that can provide various services across borders to different nationalities. However, despite these reductions in barriers and growth in cross-border activities, the banking industry is nowhere near as globalized as some other industries.

A sea is a large body of salt water that is surrounded in whole or in part by land. More broadly, "the sea" is the interconnected system of Earth's salty, oceanic waters—considered as one global ocean or as several principal oceanic divisions. The sea moderates Earth's climate and has important roles in the water cycle, carbon cycle, and nitrogen cycle. Although the sea has been travelled and explored since prehistory, the modern scientific study of the sea—oceanography—dates broadly to the British Challenger expedition of the 1870s. The sea is conventionally divided into up to five large oceanic sections—including the IHO's four named oceans (the Atlantic, Pacific, Indian, and Arctic) and the Southern Ocean; smaller, second-order sections, such as the Mediterranean, are known as seas.

Radiographs are useful in the detection of pathology of the skeletal system as well as for detecting some disease processes in soft tissue. Some notable examples are the very common chest X-ray, which can be used to identify lung diseases such as pneumonia, lung cancer, or pulmonary edema, and the abdominal x-ray, which can detect bowel (or intestinal) obstruction, free air (from visceral perforations) and free fluid (in ascites). X-rays may also be used to detect pathology such as gallstones (which are rarely radiopaque) or kidney stones which are often (but not always) visible. Traditional plain X-rays are less useful in the imaging of soft tissues such as the brain or muscle.

In the USA, for instance, very few banks even worry about the Riegle–Neal Act, which promotes more efficient interstate banking. In the vast majority of nations around globe the market share for foreign owned banks is currently less than a tenth of all market shares for banks in a particular nation. One reason the banking industry has not been fully globalized is that it is more convenient to have local banks provide loans to small business and individuals. On the other hand, for large corporations, it is not as important in what nation the bank is in, since the corporation's financial information is available around the globe.

Lung cancer often appears as a solitary pulmonary nodule on a chest radiograph. However, the differential diagnosis is wide. Many other diseases can also give this appearance, including tuberculosis, fungal infections, metastatic cancer or organizing pneumonia. Less common causes of a solitary pulmonary nodule include hamartomas, bronchogenic cysts, adenomas, arteriovenous malformation, pulmonary sequestration, rheumatoid nodules, granulomatosis with polyangiitis, or lymphoma. Lung cancer can also be an incidental finding, as a solitary pulmonary nodule on a chest radiograph or CT scan done for an unrelated reason. The definitive diagnosis of lung cancer is based on histological examination of the suspicious tissue in the context of the clinical and radiological features.

Philosophy of history is a branch of philosophy concerning the eventual significance, if any, of human history. Furthermore, it speculates as to a possible teleological end to its development—that is, it asks if there is a design, purpose, directive principle, or finality in the processes of human history. Philosophy of history should not be confused with historiography, which is the study of history as an academic discipline, and thus concerns its methods and practices, and its development as a discipline over time. Nor should philosophy of history be confused with the history of philosophy, which is the study of the development of philosophical ideas through time.

Birds need to alter their metabolism in order to meet the demands of migration. The storage of energy through the accumulation of fat and the control of sleep in nocturnal migrants require special physiological adaptations. In addition, the feathers of a bird suffer from wear-and-tear and require to be molted. The timing of this molt - usually once a year but sometimes twice - varies with some species molting prior to moving to their winter grounds and others molting prior to returning to their breeding grounds. Apart from physiological adaptations, migration sometimes requires behavioural changes such as flying in flocks to reduce the energy used in migration or the risk of predation.

The ideal criterion that each continent be a discrete landmass is commonly relaxed due to historical conventions. Of the seven most commonly recognized continents, only Antarctica and Australia are completely separated from other continents. Several continents are defined not as absolutely distinct bodies but as "more or less discrete masses of land". Asia and Africa are joined by the Isthmus of Suez, and North and South America by the Isthmus of Panama. In both cases, there is no complete separation of these landmasses by water (disregarding the Suez and Panama Canals, which are both narrow and shallow, as well as being man-made). Both these isthmuses are very narrow compared to the bulk of the landmasses they unite.

The first distinction between continents was made by ancient Greek mariners who gave the names Europe and Asia to the lands on either side of the waterways of the Aegean Sea, the Dardanelles strait, the Sea of Marmara, the Bosporus strait and the Black Sea. The names were first applied just to lands near the coast and only later extended to include the hinterlands. But the division was only carried through to the end of navigable waterways and "... beyond that point the Hellenic geographers never succeeded in laying their finger on any inland feature in the physical landscape that could offer any convincing line for partitioning an indivisible Eurasia.

Offshore drilling is a mechanical process where a wellbore is drilled below the seabed. It is typically carried out in order to explore for and subsequently extract petroleum which lies in rock formations beneath the seabed. Most commonly, the term is used to describe drilling activities on the continental shelf, though the term can also be applied to drilling in lakes, inshore waters and inland seas.

At mid-latitudes, the F2 layer daytime ion production is higher in the summer, as expected, since the Sun shines more directly on the Earth. However, there are seasonal changes in the molecular-to-atomic ratio of the neutral atmosphere that cause the summer ion loss rate to be even higher. The result is that the increase in the summertime loss overwhelms the increase in summertime production, and total F2 ionization is actually lower in the local summer months. This effect is known as the winter anomaly. The anomaly is always present in the northern hemisphere, but is usually absent in the southern hemisphere during periods of low solar activity.

Energy, water, nitrogen and soil minerals are other essential abiotic components of an ecosystem. The energy that flows through ecosystems is obtained primarily from the sun. It generally enters the system through photosynthesis, a process that also captures carbon from the atmosphere. By feeding on plants and on one another, animals play an important role in the movement of matter and energy through the system. They also influence the quantity of plant and microbial biomass present. By breaking down dead organic matter, decomposers release carbon back to the atmosphere and facilitate nutrient cycling by converting nutrients stored in dead biomass back to a form that can be readily used by plants and other microbes.

Ores recovered by mining include metals, coal, oil shale, gemstones, limestone, dimension stone, rock salt, potash, gravel, and clay. Mining is required to obtain any material that cannot be grown through agricultural processes, or created artificially in a laboratory or factory. Mining in a wider sense includes extraction of any non-renewable resource such as petroleum, natural gas, or even water.

Deforestation, clearance or clearing is the removal of a forest or stand of trees where the land is thereafter converted to a non-forest use. Examples of deforestation include conversion of forestland to farms, ranches, or urban use. Tropical rainforests is where the most concentrated deforestation occurs.Almost 30% of the world is covered by forests, excluding water mass.In temperate mesic climates, natural regeneration of forest stands often will not occur in the absence of disturbance, whether natural or anthropogenic. Furthermore, biodiversity after regeneration harvest often mimics that found after natural disturbance, including biodiversity loss after naturally occurring rainforest destruction.

Transport or transportation is the movement of people, animals and goods from one location to another. Modes of transport include air, rail, road, water, cable, pipeline and space. The field can be divided into infrastructure, vehicles and operations. Transport is important because it enables trade between persons, which is essential for the development of civilizations. Passenger transport may be public, where operators provide scheduled services, or private. Freight transport has become focused on containerization, although bulk transport is used for large volumes of durable items. Transport plays an important part in economic growth and globalization, but most types cause air pollution and use large amounts of land. While it is heavily subsidized by governments, good planning of transport is essential to make traffic flow and restrain urban sprawl.

For magnetic planets (Earth, Jupiter), the ionosphere terminates within the magnetosphere which comprises all charged particles of low (thermal) and high energies (radiation belts). In this case the solar wind interacts with the intrinsic planetary magnetic field terminating at the magnetopause. The termination of the ionosphere is then the indirect result of the solar wind interaction; e. g., in the case of Earth, represented by the boundary between solar-wind induced convective motions inside the magnetosphere and the co-rotating ionospheric plasma called the plasmapause. (The region inside the plasmapause is also called the plasmasphere; however, according to our definition this is simply part of the ionosphere.)

In summary, the ionosphere's inherent reflectivity is a natural gift that humans have used to create long-range communications connecting distant points on the globe. However, natural variability in the ionosphere reduces the reliability of our communication systems that depend on ionospheric reflection and refraction (primarily HF). For the most part, higher frequency communications such as UHF, SHF, and EHF bands are transmitted through the ionosphere without distortion. However, these bands are also subject to degradation caused by ionospheric scintillation, a phenomenon induced by abrupt variations in electron density along the signal path, resulting in signal fade caused by rapid signal path variations and defocusing of the signal's amplitude and/or phase.

Nanotechnology also offers possibilities for creating simulated weather. A cloud, or several clouds, of microscopic computer particles, all communicating with each other and with a larger control system could provide tremendous capability. Interconnected, atmospherically buoyant, and having navigation capability in three dimensions, such clouds could be designed to have a wide-range of properties. They might exclusively block optical sensors or could adjust to become impermeable to other surveillance methods. They could also provide an atmospheric electrical potential difference, which otherwise might not exist, to achieve precisely aimed and timed lightning strikes. Even if power levels achieved were insufficient to be an effective strike weapon, the potential for psychological operations in many situations could be fantastic.

Sport (UK) or sports (US) are all forms of usually competitive physical activity or games which, through casual or organised participation, aim to use, maintain or improve physical ability and skills while providing entertainment to participants, and in some cases, spectators. Usually the contest or game is between two sides, each attempting to exceed the other. Some sports allow a tie game; others provide tie-breaking methods, to ensure one winner and one loser. A number of such two-sided contests may be arranged in a tournament producing a champion. Many sports leagues make an annual champion by arranging games in a regular sports season, followed in some cases by playoffs. Hundreds of sports exist, from those between single contestants, through to those with hundreds of simultaneous participants, either in teams or competing as individuals. In certain sports such as racing, many contestants may compete, each against all with one winner.

A virtual classroom provides the opportunity for students to receive direct instruction from a qualified teacher in an interactive environment. Learners can have direct and immediate access to their instructor for instant feedback and direction. The virtual classroom provides a structured schedule of classes, which can be helpful for students who may find the freedom of asynchronous learning to be overwhelming. In addition, the virtual classroom provides a social learning environment that replicates the traditional "brick and mortar" classroom. Most virtual classroom applications provide a recording feature. Each class is recorded and stored on a server, which allows for instant playback of any class over the course of the school year. This can be extremely useful for students to retrieve missed material or review concepts for an upcoming exam. Parents and auditors have the conceptual ability to monitor any classroom to ensure that they are satisfied with the education the learner is receiving.

However, modern electronic educational technology is an important part of society today. Educational technology encompasses e-learning, instructional technology, information and communication technology (ICT) in education, EdTech, learning technology, multimedia learning, technology-enhanced learning (TEL), computer-based instruction (CBI), computer managed instruction, computer-based training (CBT), computer-assisted instruction or computer-aided instruction (CAI), internet-based training (IBT), flexible learning, web-based training (WBT), online education, digital educational collaboration, distributed learning, computer-mediated communication, cyber-learning, and multi-modal instruction, virtual education, personal learning environments, networked learning, virtual learning environments (VLE) (which are also called learning platforms), m-learning, and digital education.

The world's first artificial satellite, the Sputnik 1, was launched by the Soviet Union in 1957. Since then, thousands of satellites have been launched into orbit around the Earth. Some satellites, notably space stations, have been launched in parts and assembled in orbit. Artificial satellites originate from more than 40 countries and have used the satellite launching capabilities of ten nations. A few hundred satellites are currently operational, whereas thousands of unused satellites and satellite fragments orbit the Earth as space debris. A few space probes have been placed into orbit around other bodies and become artificial satellites to the Moon, Mercury, Venus, Mars, Jupiter, Saturn, Vesta, Eros, Ceres, and the Sun.

Autochrome, the first commercially successful color process, was introduced by the Lumière brothers in 1907. Autochrome plates incorporated a mosaic color filter layer made of dyed grains of potato starch, which allowed the three color components to be recorded as adjacent microscopic image fragments. After an Autochrome plate was reversal processed to produce a positive transparency, the starch grains served to illuminate each fragment with the correct color and the tiny colored points blended together in the eye, synthesizing the color of the subject by the additive method. Autochrome plates were one of several varieties of additive color screen plates and films marketed between the 1890s and the 1950s.

The grey heron is a large bird, standing up to 100 cm (39 in) tall and measuring 84–102 cm (33–40 in) long with a 155–195 cm (61–77 in) wingspan. The body weight can range from 1.02–2.08 kg (2.2–4.6 lb). The plumage is largely ashy-grey above, and greyish-white below with some black on the flanks. Adults have the head and neck white with a broad black supercilium that terminates in the slender, dangling crest, and bluish-black streaks on the front of the neck. The scapular feathers are elongated and the feathers at the base of the neck are also somewhat elongated. Immature birds lack the dark stripe on the head and are generally duller in appearance than adults, with a grey head and neck, and a small, dark grey crest. The pinkish-yellow beak is long, straight and powerful, and is brighter in colour in breeding adults. The iris is yellow and the legs are brown and very long.