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| Chapter 3, Sect 1 |  |
| mineral | A naturally formed, inorganic solid that has a definite crystalline structure |
| How do you know it’s a mineral?  (must answer YES to all of these to qualify as a mineral) | **SINC**   * Is it solid? * Is it inorganic (nonliving)? * Is it made in nature? * Does it have a crystalline structure? |
| crystal | The solid geometric form of a mineral, produced by a repeating pattern of atoms or molecules (gives the mineral its identity) |
| Chapter 3, Sect 2 |  |
| luster | The way in which a mineral reflects light |
| streak | The color of the powder of a mineral |
| Chapter 5, Sect 1 |  |
| natural resource | Any natural material that is used by humans – water, petroleum, minerals, forests, and animals |
| renewable resources | Resources that can be replaced at the same rate at which the resources are consumed (water) |
| nonrenewable resources | Resources that form at a rate that is much slower than the rate at which they are consumed (minerals) |
| Chapter 4, Sect 1 |  |
| rock cycle | The continual process by which new rock forms from old rock material |
| composition | The makeup of an object (such as a rock and the minerals and materials it contains) |
| Chapter 4, Sect 2 |  |
| magma | Molten (liquid) rock which forms and is found UNDER earth’s surface |
| lava | Molten (liquid) rock which escapes through a volcano or fissure (crack in earth’s crust) and is found ABOVE earth’s surface |
| intrusive igneous rock | Forms when molten rock “intrudes” or pushes into surrounding rock UNDER the surface of the earth   * coarse-grained * cooled slowly * magma |
| extrusive igneous rock | Forms when molten rock “exits” or erupts onto Earth’s surface   * fine-grained * cooled quickly * few to no mineral crystals * lava |
| 3 geological processes that form igneous rock | Melting, cooling, crystallizing |
| Chapter 4, Sect 3 |  |
| weathering | The breaking down of rock into smaller pieces called sediment |
| erosion | The carrying away of the tiny pieces of rock/sediment |
| deposition | When sediment settles out of the water or wind carrying it |
| compaction | The pressing of layers of sediment together |
| cementation | Happens when dissolved minerals crystallize and “glue” the sediment together |
| clastic sedimentary rocks | Form when rock fragments cement together by a mineral such as quartz or calcite (conglomerate) |
| chemical sedimentary rocks | Form when a solution (liquid) has enough dissolved material that crystallize forming minerals  (halite) |
| organic sedimentary rocks | Form from the remains of plants and animals  (coal) |
| 5 geological processes that form sedimentary rock | Weathering, erosion, deposition, compaction, cementation |
| Law of Superposition | Basic law stating that in any untouched layer of rocks, the youngest rocks are on top and the oldest rocks are on the bottom |
| Chapter 4, Sect 4 |  |
| contact metamorphism | Occurs when magma (an igneous intrusion) moves through the mantle and heats the surrounding rock, changing it |
| regional metamorphism | Rocks that experience change caused by pressure deep below or collision with other rock formations |
| foliated | Describes metamorphic rock texture in which the mineral grains are flat and arranged in planes or bands (gneiss) |
| non-foliated | Describes metamorphic rock texture in which mineral grains ARE NOT arranged in planes or bands (marble) |
| 2 geological processes that from metamorphic rock | Heat and pressure |
| Chapter 10, Sect 1 |  |
| mechanical weathering (physical) | **PAAI**  The process in which rock is physically broken into smaller pieces   * plants * animals * abrasion * ice |
| abrasion | The grinding away of rock by rock particles carried by water, ice, wind, or gravity |
| ice wedging | A type of frost action (weathering from ice) that occurs when wedges of ice in rock widen and deepen the existing cracks. |
| chemical weathering | **AWA**  The process in which rock is chemically broken down into smaller pieces   * acids in groundwater and in living things * water * air |
| Chapter 10, Sect 2 |  |
| differential weathering | The process in which softer, less weather resistant rocks (limestone) wear away leaving harder more weather resistant rocks (granite) behind |
| Surface area (outsides) and weathering | The more surfaces means the faster the weathering  (number of surfaces has to be greater….**not** the size of the surface) |
| weathering & climate | Chemical weathering occurs faster in warmer climates, water increases the rate of mechanical weathering, and ice wedging occurs in climates with varying temperatures |
| weathering & elevation | Higher elevations are exposed to more ice, water, and wind, and steep slopes cause rainwater to flow quickly over them |
| Chapter 10, Sect 3 |  |
| soil | Loose mixture of small mineral fragments, organic material, water, and air that can support the growth of plants |
| ideal composition of soil | inorganic stuff (40 to 50%)  water (20 to 30%)  air (20 to 30%)  organic stuff (0 to 5%) |
| organic stuff of soil | Dark, organic material formed in soil from the decayed remains of plants and animals – gives soil its nutrients |
| inorganic stuff of soil | Sand, silt, and clay which along with the organic stuff, makes soil |
| soil horizons | Layers of soil that differ in color and texture from the layers above and below |
| O horizon | Litter – made of decomposed material from fallen leaves, plants/animals |
| topsoil (A horizon) | Close to surface and usually contains the MOST organic matter or humus |
| subsoil (B horizon) | Not much organic stuff here because it collects dissolved stuff from above |
| weathered parent material (C horizon) | Usually has lots of large rocks that have been weathered off of the bedrock below |
| bedrock (R horizon) | The solid layer of rock beneath the soil, that once exposed at the surface, weathers into smaller and smaller particles |
| soil fertility | Soil is considered fertile if it is rich in nutrients and minerals which are necessary for plant nutrition |
| humus | Dark organic material formed in soil from the decayed remains of plants/animals |
| leaching | When water dissolves and carries nutrients down from the topsoil through all of the other horizons |
| Chapter 10, Sect 4 |  |
| soil conservation | A method to maintain the fertility of the soil by protecting it from erosion and nutrient loss |
| no-till farming | Practice of not disturbing a field’s soil through tillage |
| contour plowing | Plowing and/or planting using curves across the slope of a hill |
| cover crops | Grasses, legumes, or green plants that are planted to help soil in many ways (green manure) |
| terracing | Cutting land into a series of flat surfaces, that resemble steps |
| crop rotation | Rotating crops to restore nutrients to the soils |
| Chapter 11, Sect 1 |  |
| gradient | The change in elevation of a stream or river over a certain distance (bigger gradient gives the water more erosive energy) |
| discharge | The amount of water that a stream or river carries (The more discharge the greater the erosive energy and the amount of materials which can be carried |
| load | The materials carried by a stream or river |
| watershed (drainage basin) | An area of land drained by a river and its tributaries |
| divide | An area of higher ground (mountains) which separates watersheds |
| tributary | A stream that flows into a lake or into a larger stream (a feeder) |
| Chapter 11, Sect 2 |  |
| delta | A fan-shaped pattern created from a river’s current slowing and depositing into a large body of water |
| alluvial fan | A fan-shaped deposit created when a fast-moving mountain stream flows onto a flat plain (dry land) |
| flood plain | The area along a river that forms from the deposition of sediment that occurs when a river overflows its banks |
| Chapter 7, Sect 1 |  |
| density | The measure of how much matter is in a given amount of space  (I Density) |
| crust | Earth’s outer skin that contains rocks, mountains, soil, and water (thinnest and least dense layer of Earth) |
| mantle | Separated from the crust by the Moho and acts like an amorphous solid (solid and liquid tendencies; thickest layer of Earth) |
| lithosphere | Crust + the rigid upper mantle |
| asthenosphere | Portion of the upper mantle where the convection currents occur (plastic-like properties) |
| outer core | Layer of molten (melted) metal (iron and nickel) |
| inner core | Dense ball of solid metal (iron and nickel) that is the densest layer of Earth |
| Chapter 7, Sect 1A |  |
| heat transfer | When energy moves from a warmer object to a cooler object |
| radiation | Heat transfer that requires NO direct contact between a heat source and an object |
| conduction | Heat transfer by direct contact of molecules of matter |
| convection | Heat transfer by movement of fluid (liquid or gas) |
| convection current | Created when there are differences in temperatures and densities within fluids (liquid or gas) |
| Chapter 7, Sect 2 |  |
| Alfred Wegener | German scientist that hypothesized the theory of continental drift (Pangaea) |
| continental drift | **Hypothesis** that continents were once Pangaea and slowly moved over Earth’s surface (based on three types of evidence) |
| fossil | Any trace of an ancient organism that has been preserved in rock |
| mid-ocean ridge | Longest chain of divergent boundary mountains, that extends into all of Earth’s oceans |
| sea floor spreading | Process that adds new material to the ocean floor at the mid-ocean ridge |
| Chapter 7, Sect 3 |  |
| plates | Separate sections of the lithosphere |
| plate tectonics | **Theory** that states that pieces of Earth’s lithosphere are in constant, slow motion, driven by convection currents |
| faults | Breaks in Earth’s crust where plate boundaries form |
| convergent boundary | Collision between two plates caused by compression |
| \*compression | Force (stress) which occurs at reverse faults (convergent boundaries) “It’s **reverse** to run into something” |
| divergent boundary | Division between two plates caused by tension |
| \*tension | Force (stress) which occurs at normal faults (divergent boundaries) “It’s **normal** to dive off a diving board” |
| rift valley | Created on land at divergent boundaries |
| transform boundary | Sliding plates (in opposite directions) caused by shearing |
| \*shearing | Force (stress) which occurs at strike-slip faults  (transform boundaries) |
| deep ocean trench | Formed from subduction at convergent boundaries |
| subduction | When the ocean floor sinks beneath a deep ocean trench and gets swallowed by the mantle |
| SCIENCE WORDS |  |
| compare | To couple together, match, or be of the same or similar quality or value |
| contrast | To compare in order to show unlikeness or differences and to note the opposite nature of things |
| demonstrate | To show, describe, or explain |
| analyze | To examine carefully and in detail so as to identify causes, key factors, and possible results |
| texture | The feel, appearance, or consistency of a surface or a substance |