Science GA Milestones Study Guide: 5th Grade

EARTH SCIENCE

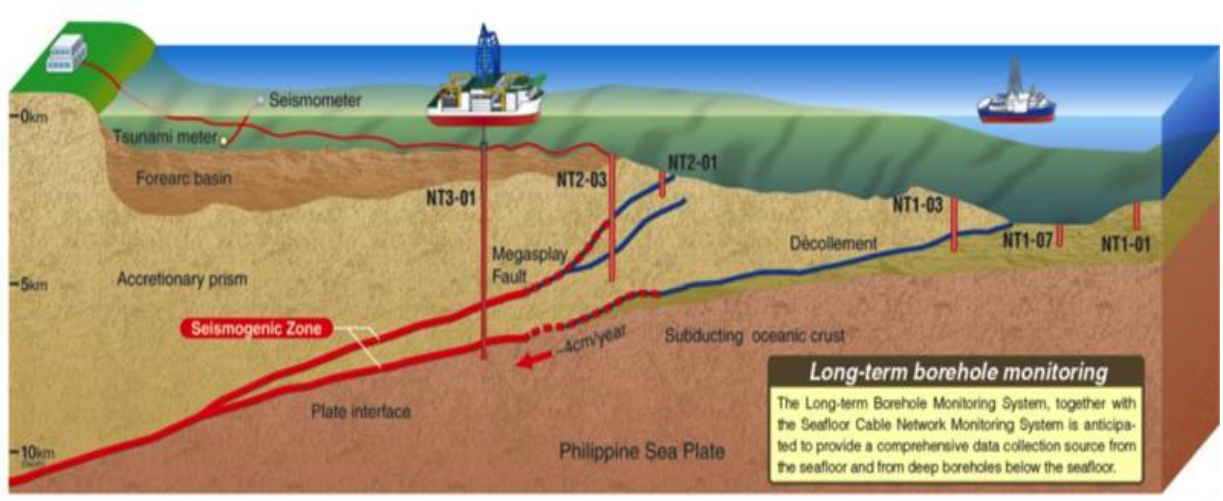
Weathering – rocks and soil are worn down

Erosion – when the tiny pieces of rock that is worn down from weathering is carried away by wind, water, gravity, or living things

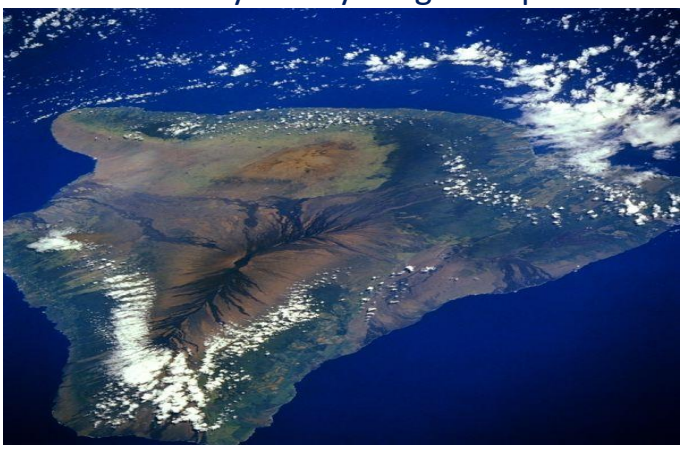
Deposition (deltas, sand dunes) – when these tiny rocks/materials stop moving and build up somewhere else

Earthquakes – caused by the moving of fault lines; both constructive (make new land formations) and destructive (creates tsunamis – big tidal waves – which destroy places)

Faults – San Andreas Fault is one of the most famous fault lines; there are different types of faults depending on the how the tectonic plates collide; when the tectonic plates collide, they form many new land formations like mountains



Volcanoes - the lava makes new land formations (Hawaiian Islands); however, the lava destroys everything in its path first



IMPACT OF ORGANISMS

Dust Bowl – poor farming techniques helped cause the dust bowl; clouds of dust would enter the towns affecting many things

IMPACT OF ORGANSIMS CONT…

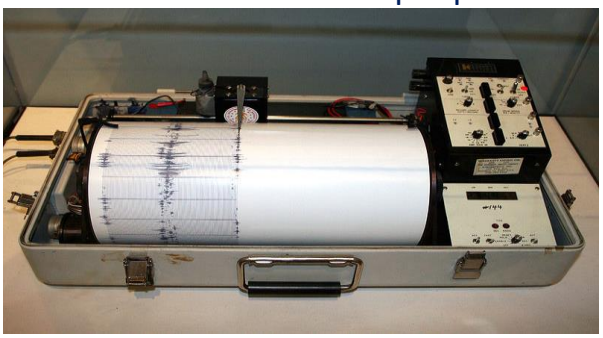
People, animals, insects, and reptiles

- all disturb the upper layers of the Earth which makes it more easy for weathering and erosion to occur; humans are the biggest 'disturbers' of the Earth.
- the loss of this good topsoil lowers the quality of growing soil which makes it more expensive and harder to grow good crops

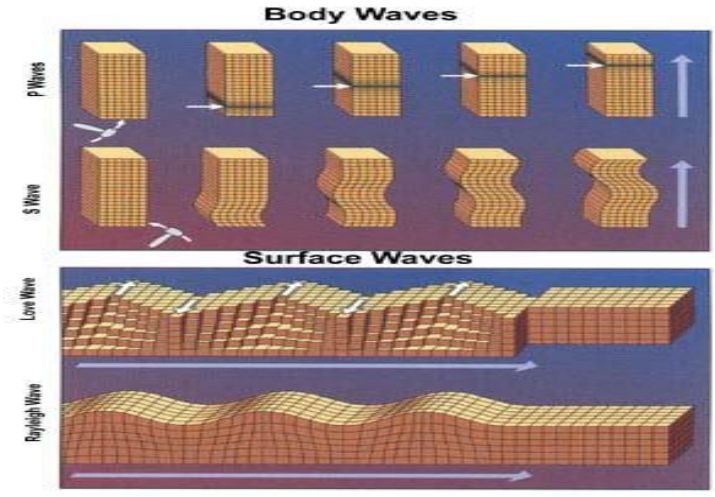
Preventing erosion – plant flowers and plants; put mulch or fertilizer down; put retaining walls/edging down


Seismograph – used to measure the movement of the ground during an earthquake

- scientists can warn people of incoming tsunamis with this technology



Seismic Waves – waves of energy caused by a sudden breaking of rock with the Earth or an energy that travels through the Earth and is recorded on seismographs



Richter Scale – scores earthquakes from 1-10 depending on the amount of movement that the earthquake causes

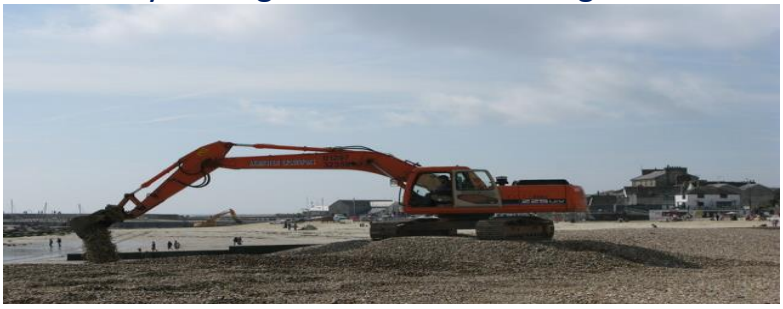
Flood control – keeps water from overflowing onto land and towns

- dams – help control the flow of water from major rivers and is turned into electric energy

- levees – designed to control the flow of water; they do not block water but rather make the sides of the river taller to prevent flood damage to cities, houses, and businesses

- storm drain management – heavy rainfall leads to large amounts of water running through cities and towns; the drain management system helps with that water flow

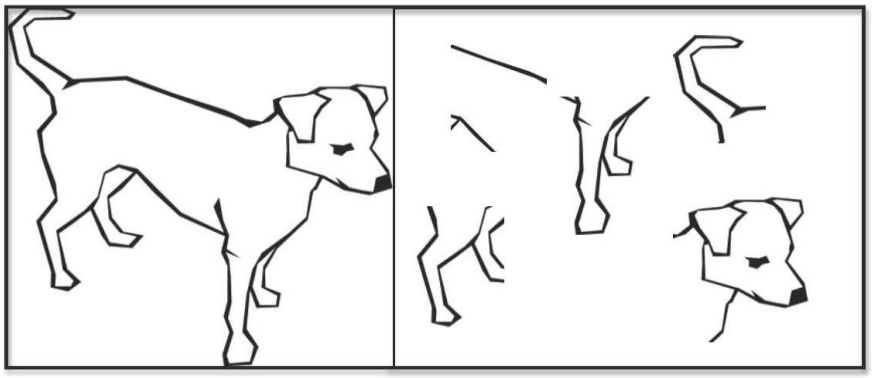
Beach reclamation (Georgia coastal islands) – the act of reclaiming a beach from erosion by adding sand and 'reclaiming' the shoreline as it once was



PHYSICAL SCIENCE

An object is the sum of its parts – no matter how parts of an object are put together, the weight of the whole object is ALWAYS the same

Emergence – Is a whole dog made up of the sum of its parts?



matter – anything that occupies space
mass – how much matter is in that space
weight – how mass of an object is affected by gravity
volume – how much space an object takes up
density – how solid an object is
physical properties – things that can be measured or observed
magnification – scientist use technology to see things our eyes cannot see

Physical Change – changes affecting the form of a chemical substance, but does not change its chemical composition

States of Matter

solid – when the particles are packed closely together

liquid – fluid that conforms to the shape of its container

gas – compressible fluid that can conforms to the shape of its container but can make it bigger as well

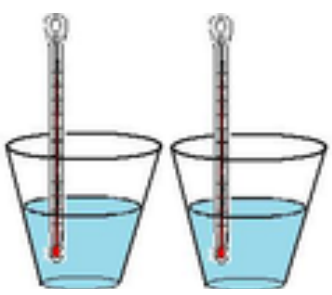
CHANGES IN MATTER

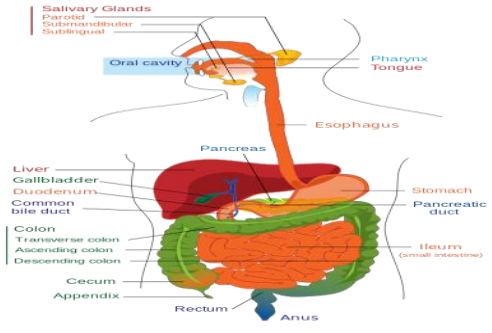
Physical change – changes the form but not composition (molecules)

- temperature – water changes to ice when the temperature is lowered to 32 degree Fahrenheit. Water boils and turns into vapor when it is heat to 12 degree Fahrenheit.

Chemical change -occurs when a substance combines with another new substance

- combustion – burning candle or wood
- dissolve – mixing salt in water
- digestion – food breaking down in your stomach acid





Electricity – components for an electrical current: power source, wire, and a bulb

conductors – objects that all electricity to flow through them

- examples: most metals like copper, iron, steel, silver, gold; but also water



insulators – materials that do not all electricity to flow through them

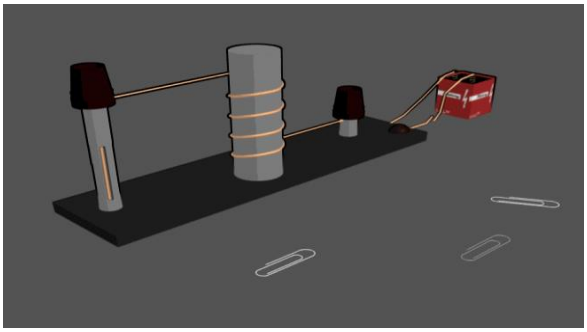
- examples: rubber and plastic



static electricity – occurs when opposite charges attract (lightening is a form; rub a balloon on your sweater and then put it to a kid's hair☺

Bar magnet VS an Electromagnet

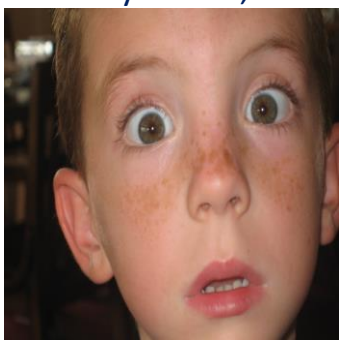
- bar magnets maintains a constant magnetic pull
- electromagnets can be turned on or off (good for simple motors)
    - opposite magnetic poles attract and similar magnetic poles repel each other



LIFE SCIENCE

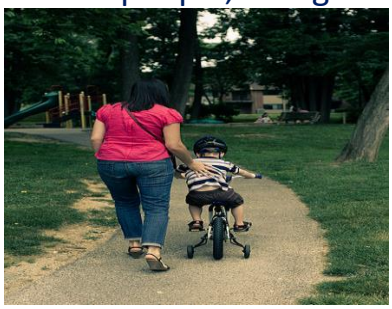
inherited traits – these are physical traits (DNA) you get from your parents

- eye color, hairline, ear size, skin color, freckles, allergies



learned behaviors – what a person learns through observation from parents or guardians, friends, teachers, TV, etc.

- manners, how you treat people, riding a bike, learning, reading, writing


genes – DNA passed from parent to child

- even though biological parents have control over the physical aspects of a person's being, guardians and step-parents play a major role in a person's traits as well (I should know, I was raised by my step-dad and we are A LOT alike☺

Classifying Organisms

vertebrates – an animal with a backbone


invertebrates – an animal without a backbone


Vertebrate Groups – fish, amphibian, reptile, bird, mammal



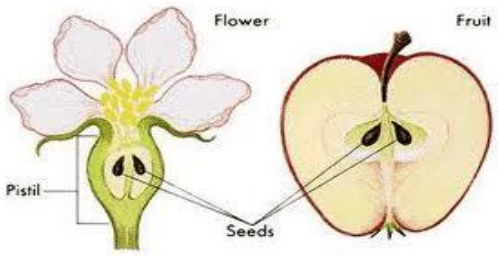


PLANT GROUPING

plants with seeds

- gymnosperms - seeds in cones


- angiosperms - seeds in fruit
  - plants that reproduce with flowers



plants without seeds -

- vascular – tissue that makes them tall (trees)
- non-vascular- do not have the special tissue so they are short (moss)


(vascular)

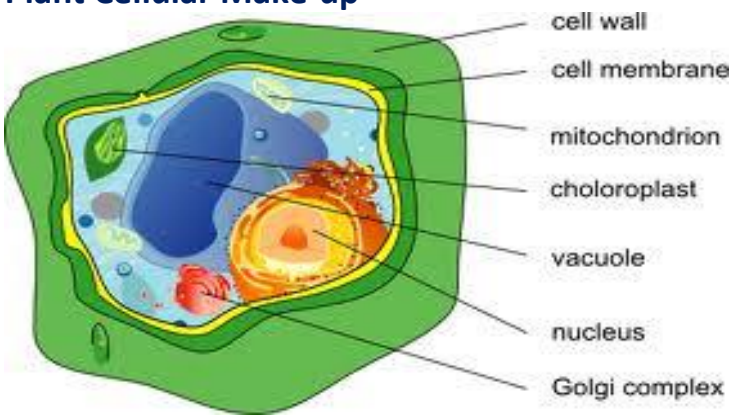

(non-vascular)

CELLS – EVERY living thing is made up of cells. (the human body has around 75 trillion cells!)

Purpose of cells

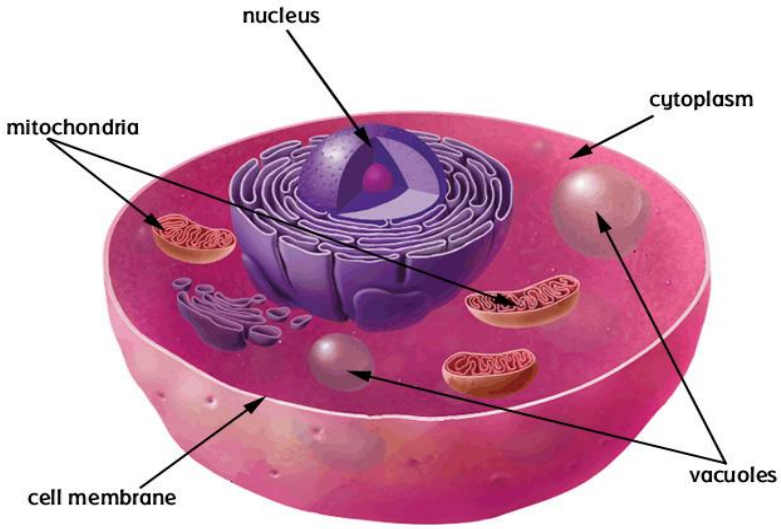
- keeps people health
- transporting oxygen
- cells help us move

Plant Cellular Make-up



- membrane – thin layer just outside the cell wall that is soft which allows some things in to make the plant stronger; keeps all the pieces inside
- wall cytoplasm – thicker part of the plant for protection
- nucleus – central part of an atom
- chloroplasts – food for plants

Animal Cellular Make-up

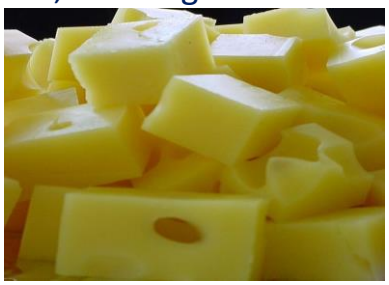


- membrane – cholesterol for people; keeps all the things inside
- cytoplasm – helps move materials around the cell and dissolves in cellular waste
- nucleus – central part of the atom

Microorganisms – you need a microscope to see these living cells

Good microorganisms – organisms that are good for your health

- yogurt, cheese, vaccines, mouth germs




Bad microorganisms – organisms that are bad for your health and make you sick

- all diseases such as flu, chicken pox, and mono