



EDZUKATION

"It's a ZOO in education"

Science CRCT Study Guide: 4th Grade

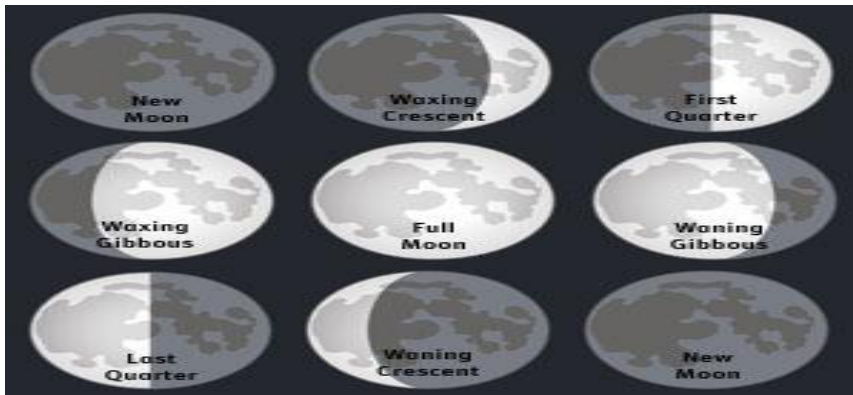
Measurements

- ❖ **length** – how long something is (pencil)
- ❖ **area** – how much room is in something (classroom)
- ❖ **volume** – how much liquid is in a container (soda bottle)
- ❖ **weight** – how heavy something is (people)

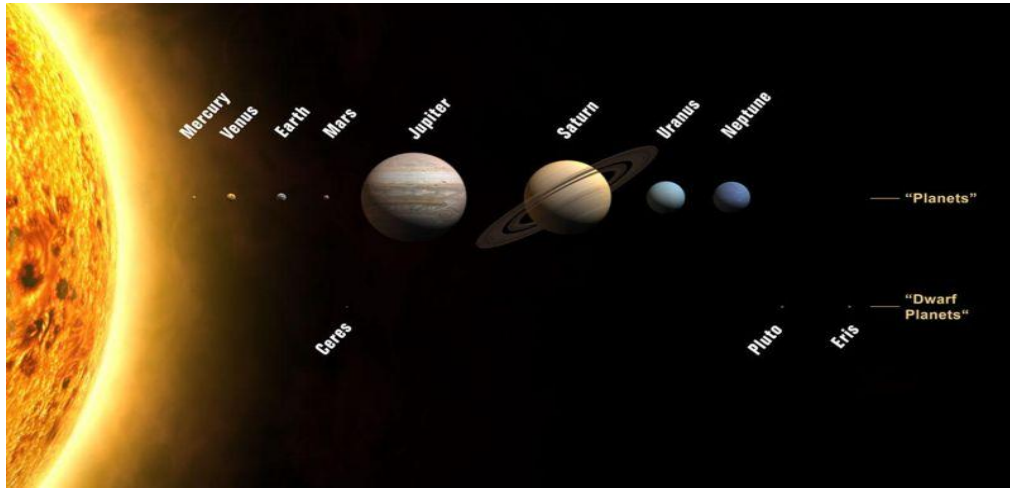
Solar System

- ❖ the sun is a star
- ❖ the earth revolves around the sun
- ❖ stars are classified by size, color, and patterns
 - *star colors* – blue, white, and yellow to orange and red
 - the color tells us its temperature (*blue is the hottest; red is the coolest*)
 - the *brighter* a star is, the *closer* it is
- ❖ telescopes are used to see far away in the sky
- ❖ the gravitational pull pulls stars quickly, and the planets slowly
- ❖ a comet is a ball of frozen rock
- ❖ asteroids are bits of rock and metal
- ❖ a constellation is a pattern of stars
- ❖ the *Earth is slightly tilted and rotates* on an imaginary axis (why we have SEASONS)
 - the reason we have seasons (spring, summer, fall, winter): due to the Earth's tilt, parts of the Earth is closer and farther away to the Sun
- ❖ it takes the Earth one day to spin completely around
- ❖ it takes the moon one month to spin around the Earth
- ❖ it takes the Earth one year to rotate around the Sun

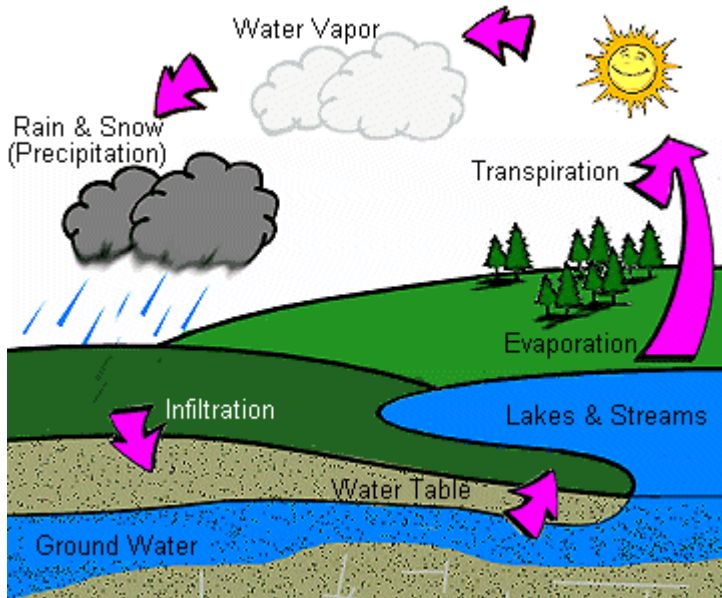
Phases of the Moon



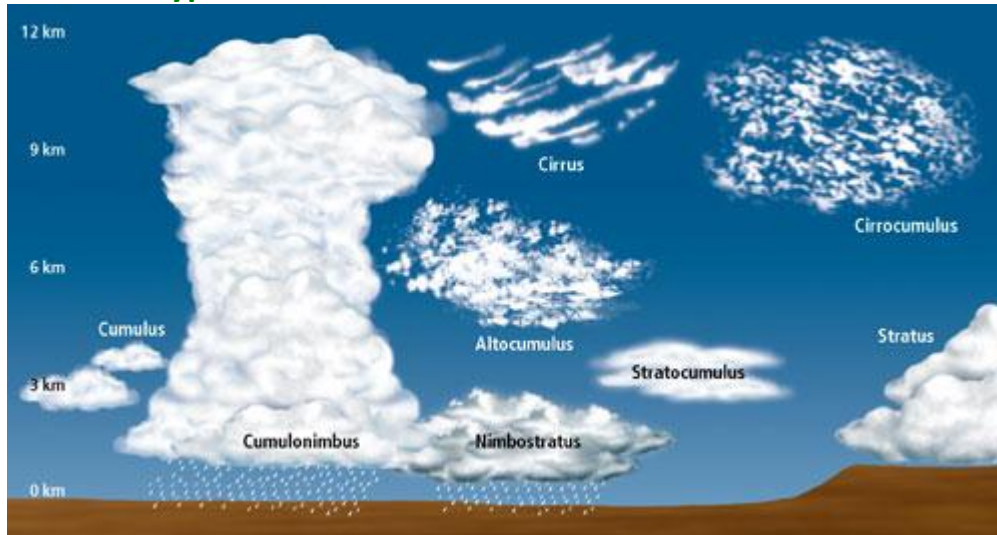
Order of the Planets



The Water Cycle



Different types of clouds



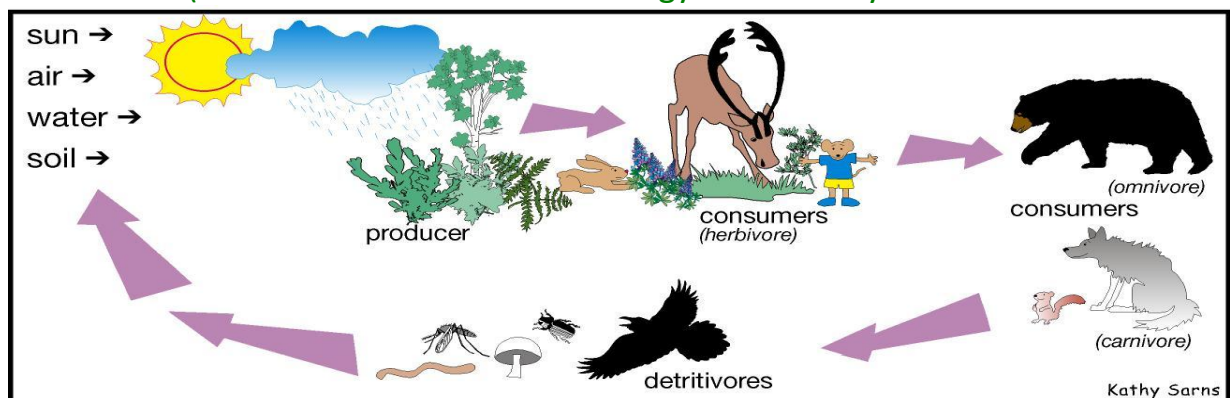
Weather

- ❖ thermometer – measures temperature (hot/cold)
- ❖ rain gauge – measures how much it rained
- ❖ barometer – measures the pressure in the air
- ❖ wind vane – measures the direction of the wind
- ❖ anemometer – measures the wind speed
- ❖ weather - weather that is daily (what you see each day)
- ❖ climate - weather over a period of time (what you see each season)
- ❖ water boils at 212° F or 100° C
- ❖ clouds are formed from evaporation

Ecosystem

- ❖ environment – all the living and nonliving things around you (the park)
- ❖ ecosystem – all living and nonliving things in an area (pond in the park)
- ❖ population – groups of living things in an ecosystem
- ❖ habitat – meets the needs of a living thing
- ❖ community – all the populations in an ecosystem
- ❖ producers – living things that can make its own food
- ❖ consumers – living things that can't make its own food
- ❖ decomposers – living things that feed on the waste of plants and animals
- ❖ herbivore – only eats plants
- ❖ carnivore – only eats meat
- ❖ omnivore – eats both plants and meat
- ❖ predator hunts prey
- ❖ if there are too many living things of one species, and not enough of its prey, the prey could die out (this means if there are not enough gazelles for the lions to eat, the lions could die because there is NO FOOD)
- ❖ bears hibernate – sleep for a long time
- ❖ camouflage – to blend in with your background

Food chain (continuous movement of energy in the ecosystem)



Mirrors, lenses, prisms

- ❖ transparent – all light can pass through it (glass)
- ❖ translucent – some light can pass through it (plastic)
- ❖ opaque – almost no light can pass through it (wood)
- ❖ reflection – light bouncing off an object
- ❖ refraction – light bending
- ❖ convex lens – lens that is thicker in the middle than the edges
- ❖ concave lens – lens that is thicker at the edges than the middle
- ❖ prism – light changes direction as it enters a prism

Sound

- ❖ sound is vibration in the air
- ❖ pitch – how high or low sound is
- ❖ frequency – number of vibrations sound makes
- ❖ the more air available, the higher the pitch (think filling water in a glass; the more water, the lower the sound is)

Simple Machines

- ❖ a simple machine has only a few parts



***The fulcrum is the triangle part of a lever (see picture above)

- ❖ the more force you use, the faster the speed
- ❖ the gravitational force of an object is always down
- ❖ the size and weight of an object effects it speed (the heavier something is it will be slow to start, fast to finish)
- ❖ when something of greater weight interacts with something of lesser weight, the thing the weighs the least will change is direction (force) – For example, if you walk into me, I will stop, but you will fall over 😊