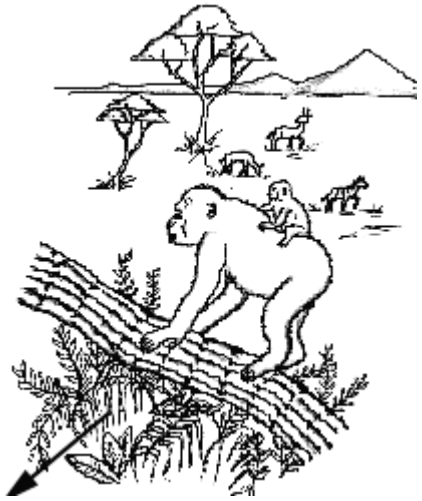
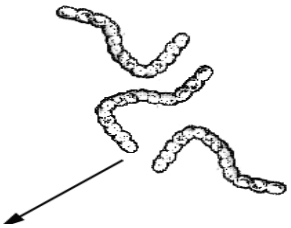
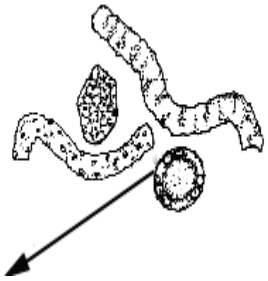
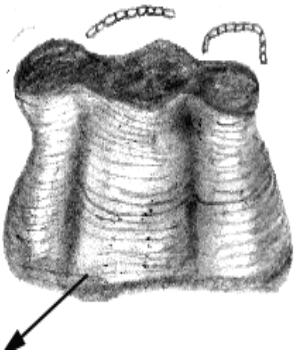
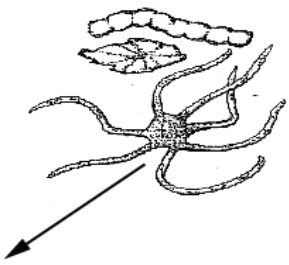
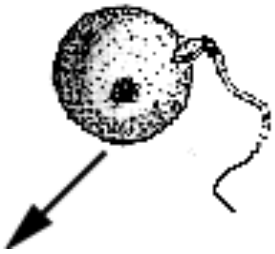
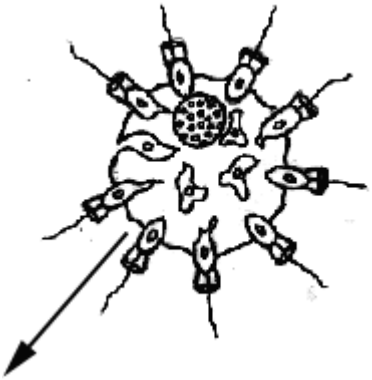
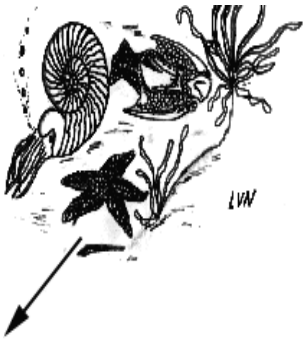
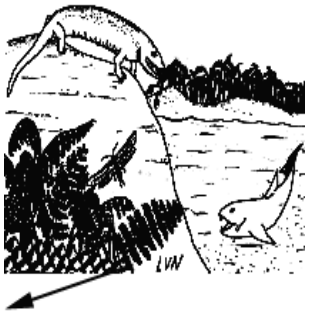
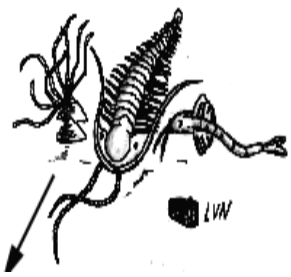
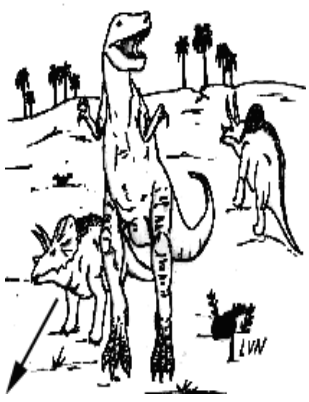
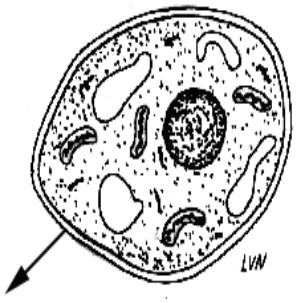
Early apes are found. Savannas expand ~22.5 MYA 	Photosynthesis by blue-green bacteria. Oxygen forms in the atmosphere but immediately reacts with molecules in the ocean and crust of the Earth. The actual atmospheric oxygen did not start to increase until, almost a billion years later, that is when the ozone layer started to form! ~3000MYA 	Prokaryotic cells (No nucleus, small) diversify: Bacteria-like blue-green bacteria diversify. ~2500 MYA 
Earliest life. Prokaryotes ~3500 MYA 	Prokaryotic cells diversify. More complexity is evident. More complex biochemical pathways. Foundations to future eukaryotic cells established. Ozone layer finally starts to form in the atmosphere. ~2100 MYA 	Sexual Reproduction is evident. ~1000 MYA 

Plant and Animal Domestication by *Homo sapiens* ~0.01 MYA (10,000YA) 	Reptiles radiate, new forms appear. ~280 MYA 	First stone tools discovered with human remains. ~1.8 MYA 
Multi-cellular organisms appear. Extra-cellular matrix. First algae (not blue green bacteria, but eukaryotic algae) *Grypania spiralis* appear. Algae cysts form shortly thereafter ~2000 MYA 	Reptiles appear, amphibians and insects radiate. Coniferous trees appear ~345 MYA 	Shell-bearing marine invertebrates dominate. Vertebrates appear, armored jawless fish appear. ~500 MYA 

Amphibians, insects, primitive trees, forests appear on land. ~395 MYA 	Early dinosaurs evolve. Mammal-like reptiles evolve. Cycad and conifer trees dominate ~225 MYA 	Monkeys appear. ~37.5 MYA 
Marine invertebrates radiate. Shell-bearing animals appear. ~470 MYA 	First birds appear. Dinosaurs radiate. Reptiles found on land, air and sea. ~180 MYA 	Highly specialized dinosaurs radiate ~135 MYA 

Very early primates appear. Archaic mammals dominate. ~64 MYA 	Jawed fish first appear. Armored fish dominate. Land plants, giant ferns, arthropods invade the land. ~435 MYA 	Early primates radiate ~53.5 MYA 
Dinosaurs become extinct (except for birds-therapods) ~65 MYA 	Primitive humans diverge ~4.9 MYA 	Single eukaryotic Cells appear (possess a nucleus, "prokaryotic" mitochondria and chloroplasts) ~2200 MYA 

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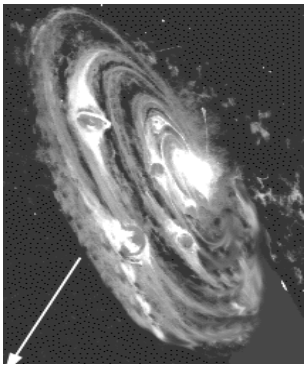
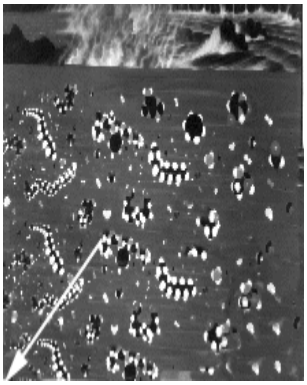
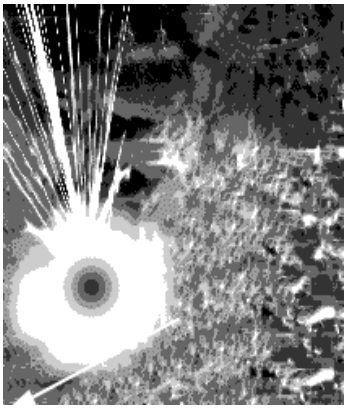
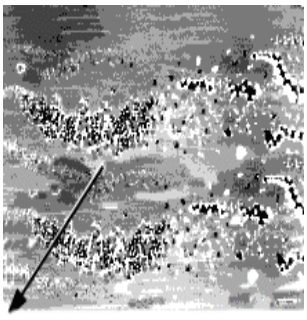
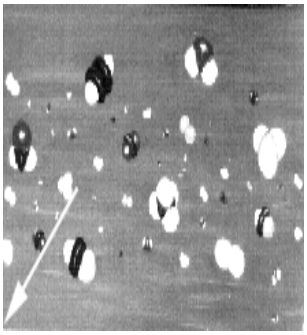
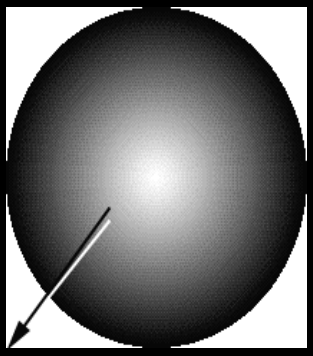
Solar System Accretion Disk forms from nova debris (star dust). The Sun "lights up". ~4800 MYA 	Miller's molecules: amino acids, nucleic acids and, fatty acids are formed from simple atmospheric Oparin's molecules. ~4000 MYA 	Development of protocrust, protohydrosphere and protoatmosphere, Meteorite impacts continue. ~4300 MYA 
"Millers Molecules" polymerize into RNA, DNA (The Replicators) and proteins. ~3800 MYA 	Oparin's molecules: methane, ammonia, carbon-dioxide, hydrogen, water etc found in the atmosphere and oceans. ~4200 MYA 	Angiosperms the flowering plants appear and radiate to become the dominant plant life on Earth. ~120MYA-Now 

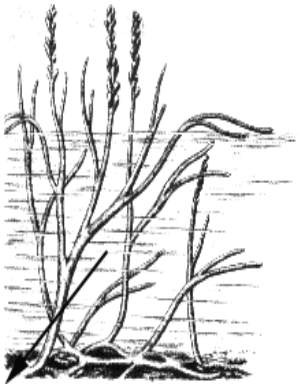
Big Bang

15000 MYA



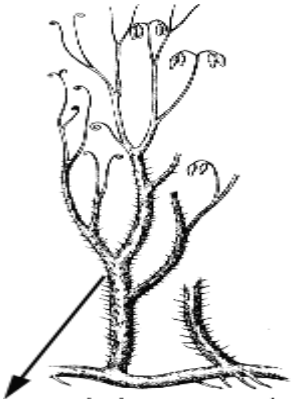
Zosterophyllum, aquatic plants radiate.

~409 MYA



Psilophyton a primitive land plant

~400 MYA



Devonian forest, fern-like leaves and lycopods.

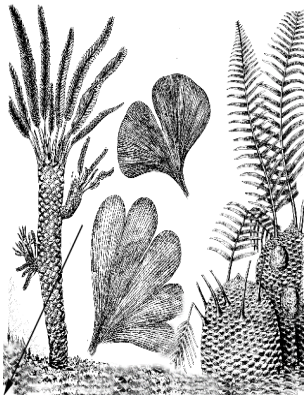
~368 MYA

Pennsylvanian forest, tree ferns, seed ferns, lycopods, horsetails and conifers (early relatives of redwoods, spruces and pines). These forests fossilized and made the coal seams that powered the industrial revolution.

~320MYA

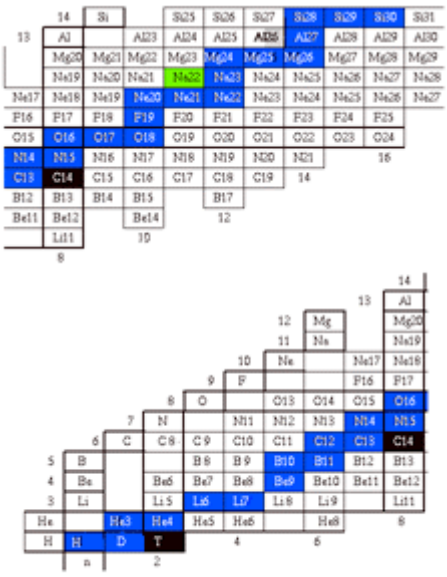
Some typical Mesozoic plants, Williamsonia, Ginkgos and Cycads

~208 MYA



Nucleosynthesis occurs within giant primary stars. 75% Hydrogen and 25% Helium, the products of the Big Bang event condense into huge fusion reactors. Hydrogen is fused into more helium.... temperatures and pressures increase, helium is then fused into larger and larger atomic nuclei.... the periodic chart is born!

~10000 MYA



Primary stars form from huge condensations of Hydrogen and Helium gas produced from the Big Bang. Temperatures and pressures build and nuclear fusion occurs. The larger the star the faster and hotter the fusion progresses

~9000 MYA