

<p>1. Formation of Earth formed from a cloud of dust left over from the big bang (15 bya)--possibly collisions of planetoids, followed by density stratification</p>	4.5 bya
<p>2. Prokaryotic cell (bacteria) evolves there are fossils of cyanobacteria dated at 3.5 bya stromatolites exist that are probably 3-3.5 bya (bacterial deposits) scientists aren't sure how or when life first began</p>	3.5 bya
<p>3. Cyanobacteria first carry out photosynthesis scientists are not sure how or when this evolved</p>	2.8 bya
<p>4. Oxygen builds up in the atmosphere photosynthesis produces oxygen as a waste product; over time, early photosynthesizers create more and more oxygen</p>	1.5 bya
<p>5. Eukaryotic cell evolves endosymbiont hypothesis: a combination of prokaryotic cells working in concert leads to the evolution of organelles (differentiated cell parts) which are characteristic of eukaryotes</p>	1.5 bya
<p>6. Multicellular organism evolves several hypotheses exist to explain how multicellular organisms came about</p>	650 mya
<p>7. Oxygen content of atmosphere similar to today approximately 21% increase in cyanobacteria populations (corroborated with fossil record) cause the increase in oxygen content **460 mya: first record of plants so these had nothing to do with oxygen levels</p>	500 mya
<p>8. First vertebrate (animal with backbone) they were fish!</p>	500 mya
<p>9. Fish evolve first fish were jawless, freshwater dwellers related to lampreys and hagfish today</p>	500 mya
<p>10. Plants, fungi and animals go to land difficulty with living on land: support structures! How to keep the body from crushing the lungs etc.? fins replaced by short legs</p>	460 mya
<p>11. Amphibians evolve</p>	365 mya

<p>**375 mya: new fossil discovered of fish with amphibian-like characteristics, namely "fins with an elbow joint that could lift the animal from the ground"--Boston Globe developed lungs in adulthood but spent most of life in water still had tail fins and lateral lines like fish ichthyostegids</p>	
<p>12. Reptiles evolve ability to lay eggs on land flexible scales that prevented drying out</p>	310 mya
<p>13. Dinosaurs evolve 20 million years after major extinction killed 95% of life on Earth similar to modern crocodilians</p>	230 mya
<p>14. Mammals evolve evolved around the same time as the dinosaurs but were not prevalent platypus is the oldest living species of mammal modern mammals evolved only about 100 mya</p>	230 mya
<p>15. First flowering plants evolve over 95% of flowering plants depend on animals for pollination, mostly insects (also birds, bats, other verts)</p>	120 mya
<p>16. Dinosaur extinction killed off during a mass extinction that claimed over 70% of all species on Earth several hypotheses as to why the extinction occurred opened up a variety of niches that mammals quickly overtook</p>	65 mya
<p>17. Homo sapiens evolve all modern humans can be traced to a common ancestor from 150,000 ya although H. sapiens fossils are much older human species modern humans appeared about 50,000 years ago: artifacts including complex tools, development of language and evidence of cultural advances most closely related to chimpanzees</p>	150,000 ya