

# Evolution

<p style="text-align: center;"><b>Aristotle (350 BC)</b></p> <p>Placed all of life into a “scala naturae” or a ladder of complexity. Organisms were placed in order of complexity and fulfill a permanent and unchanging role.</p>	<p style="text-align: center;"><b>Natural selection</b></p> <p>The mechanism for creating new species based on individual variation within a species.</p>	<p style="text-align: center;"><b>Adaptation</b></p>
<p style="text-align: center;"><b>James Hutton (1795)</b></p> <p>Gradualism: the features on Earth are changing (ex. canyons are formed by the flow of water).</p>	<p style="text-align: center;"><b>Sedimentary Rock</b></p> <p>Made from layers of silt and sand Lower layers of rock are from earlier in the earth’s history</p>	<p style="text-align: center;"><b>Survival of the Fittest</b></p>
<p style="text-align: center;"><b>Lamarck (1809)</b></p> <p>Early theory of biological evolution. All life on earth came from lines of decent of abiotically generated microbes. Evolution could create complexity via two methods</p> <ol style="list-style-type: none"> <li>1. Use and disuse of structures</li> <li>2. Inheritance of acquired characteristics</li> </ol> <p>Even if his reasons for evolution are flawed his ideas are important because it established that evolution was a response of an organism to its environment</p>	<p style="text-align: center;"><b>Darwin’s Evolution: Decent with modification</b></p> <ol style="list-style-type: none"> <li>1. Competition</li> <li>2. Over production</li> <li>3. Variation</li> <li>4. Adaptation</li> <li>5. Natural Selection</li> <li>6. Speciation</li> </ol>	<p style="text-align: center;"><b>Evidence of Evolution</b></p> <p>Fossils</p> <p>Homologous Structures</p> <p>Vestigial Structures</p> <p>Comparative Embryology</p> <p>Comparative Biochemistry</p> <p>Biogeography</p>
<p style="text-align: center;"><b>Darwin (1859)</b></p> <p>Took a trip to the Galapagos Islands Observed diversity of species Eventually wrote the book: On the Origin of Species by Means of Natural Selection.</p>		
<p style="text-align: center;"><b>William Paley (19<sup>th</sup> Century)</b></p> <p>The Watchmaker Hypothesis: If you found a pocket watch in the woods and examined its complexity you would assume that a designer had created it specifically to tell time. Since animals are complex and seem to be perfectly suited to their environments they must also have a creator. (Evolution provides an alternative)</p>		
<p style="text-align: center;"><b>Mutations</b></p>		
<p><b>Darwin did not know about DNA</b></p>		<p style="text-align: center;"><b>Niche</b></p>