

Source: [\[\[KBiologyMasterIndex\]\]](#)

## 1 | Evolution

*The unifying theory of all biology involving any change in the heritable traits in a population over a long period of time.*

**Causes of evolution** – different reproduction rates – Environmental pressures – non-random mate choices – Migration

**Evidence for evolution** – Lab evidence of short-lifespan bacteria – Fossils and DNA evidence

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### 1.1 | Begin by defining evolution

⇒ Descend with modification

**Micro-evolution:** changes in alleal frequency within a population from one generation to the next

**Macro-evolution:** descend of different species from a common ancestry over much longer timescales

*Remember: evolution happens over **deep time** — much longer than your monkey brain could feasibly preserved*

The size of civilization to now is about 10,000 years, which is 0.002 seconds if all history is 1 minute.

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#### 1.1.1 | DNA Evidence for evolution

Comparing DNA between species could show an idea of common ancestry.

##### Evolution Experiment

- Take bacteria
- Introduce a filter/challenge (antibiotic)
- Result: resistant bacterial is left, and they prosper

#### 1.1.2 | Fossil Example

- Analyzing fossils over time