**Objective 4 - Contributions to Evolution**

**Georges Cuvier** (1769-1832)- developed the science of palaeontology

* the deeper the fossils were found, the less they resembled the organisms of today
* species becoming extinct was quite common
* new species appeared and disappeared over millions of years
* purposed **catastrophism** - the idea that catastrophes, such as floods, diseases or droughts periodically destroyed species living in a particular region, allowing other species from neighbouring regions to repopulate the area

\* He opposed evolution

\* Thought ‘new species’ came from nearby areas.

**Jean Baptiste Lamarck** (French Naturalist) published a theory of evolution in 1809 (Darwin was just born)

* purposed that microscopic organisms came from non-living sources
* body parts used extensively in the environment would grow bigger and stronger (use and disuse)
* characteristics acquired during a lifetime could be passed on to offspring (large size, short hair, large muscles) – thought organisms could become better adapted over time
* **inheritance of acquired characteristics** - theory that characteristics acquired during an organismss lifetime could be passed to its offspring
* had an idea that adaptations to the environment resulted in evolution of a species
* while many of his ideas were incorrect, they promoted great discussion

**Charles Lyell** (geologist) wrote principles of Geology. (Expanded on ideas from 1795 – Hutton)

* Developed theory of **uniformarianism** (theory that geological processes repeat themselves).
* Change occurs through slow but steady processes.
* Understanding the present will help to understand the past.
* Rejected idea that irregular, unpredictable, catastrophic events shaped the earths history.
* Had a strong influence on Darwin.

**Thomas Mathus** (English economist) - wrote Principles of Population in 1798 (read by Darwin in 1838)

* stated that populations were controlled because the populations grew faster than their food supply
* eventually starved, contracted diseases, or went to war (humans)
* struggle to survive

Both men had a strong influence on Darwin (~1838).

**Alfred Wallace** (English naturalist**)** came to the same conclusion as Darwin that a species can change over time.

* Populations had variations and could adapt to different situations.