

# Evolutionary History Wall

It is a timeline of the history of life on earth and its endurance and survival through several extinctions.

Each thumbprint represents a million years.

To visualize a million years each thumbprint represents 1000 grey dots. Each of those grey dots represents 1000 of the black dots.

## **Black Earth: Earth's formation (4.55 - 4.3 Billion Years Ago)**

- 4.55 Billion years ago – Earth forms
- 4.5 Billion years ago - Meteor bombardment
- 4.4 Billion years - Core of the Earth forms

## **Grey Earth: Minerals accumulate (4.3 – 3.85 Billion Years Ago)**

- 4.2 Billion years ago – Oceans formed
- 3.85 Billion Years ago – First chemical life forms

## **Blue Earth: Mostly an ocean earth (3.85 – 2.45 Billion years ago)**

- 3.8 Billion years ago – Bacteria diversify
- 3.7 Billion years ago – The first photosynthetic bacteria \*which they suspect were originally purple in color
- 3.5 Billion Years ago – **Cyanobacteria (a.k.a. “blue green algae”, but it is actually bacteria)**
- 2.7 Billion Years ago – 1<sup>st</sup> Eukaryotic cells
- 2.6 Billion Years ago – Bacteria on land

## **Red Earth: Earth “rusts” because oxygen starts collecting in Earth's atmosphere and interacts with the planet's tremendous amount of Iron. (2.5 Billion – 850 Million Years Ago)**

- 2.5 Billion Years Ago – Age of Oxygen
- 2 Billion Years Ago – Oxidation causes red layers that can be found in geological rock formations from this time.
- 1.5 Billion Years Ago – 1<sup>st</sup> Viruses
- 1.2 Billion Years ago – Multicellular Algae communities
- 900 Million Years Ago – Ediacaran Organisms evolve.

## **White Earth: “Snowball Earth”. Earth freezes (850 – 600 Million years ago)**

- 600 Million Years Ago – Earth's ozone solidifies and protects the planet from massive amounts of UV-rays from the sun

## **Green Earth: “Life as we know it”. Earth begins to warm as Carbon Dioxide accumulates in the atmosphere, and life rapidly diversifies (600 Million Years ago – Today)**

570 Million Years Ago – The first fungi, a chytrid like variety. **Chytrid is the fungus causing the global pandemic and extinction of many frog species.**

565 million years ago - first sexual reproduction

### **543 Million Years Ago – Vendian Extinction (Level 3)**

Hard Shelled Animals Evolve

540 Million Years Ago – Oldest Arthropods (trilobites) and Comb Jellyfish evolve.

535 Million Years Ago – One of your earliest relatives, the Pikaia. *The evolution of chordate phylum (i.e. notochord and later backbone)*

530 Million Years Ago – 1<sup>st</sup> Reefs form

**520 Million Years Ago – Cambrian Extinction (Level 3)**

500 Million Years Ago – **First Coral evolves**

480 Million Years Ago – First land plants *\*and first fishes*

450 Million Years Ago – Sharks, Skates and Rays

**443 Million Years Ago – Ordovician Extinction (Level 2) 65% of all life became extinct**

425 Million Years Ago – Early Vascular plants on land

420 Million Years Ago - Arthropods on land *\*insects*

400 Million Years Ago – Oxygen in the Earth's atmosphere reaches its current rate of 21%

375 Million Years Ago – **First Land Amphibians**

**364 Million Years Ago – Devonian Extinction (Level 2) 70% of all life became extinct**

350 Million Years Ago – The first “coal forests”. *What we burn today for coal power was formed*

320 Million Years Ago – Reptiles evolve

290 Million Years Ago - **First frog / salamander; Gerobatrachus**

**250 Million Years Ago – Permian Extinction (Level 1) 93% - 97% of all life became extinct**

**240 Million Years Ago – Modern coral evolves**

225 Million Years Ago – First Triassic Dinosaurs

**206 Million Years Ago – Triassic Extinction (Level 2) 70% - 75% of all life became extinct**

Jurassic Period begins and the rise of the Sauropod.

190 Million Years Ago – **First Frog, Prosalirus bitis**

160 Million Years Ago – First Mammals

130 Million Years Ago – Flowering plants

100 Million Years Ago – **Bees evolve**

70 Million Years Ago – Tyrannosaurus Rex evolves

**65 Million Years Ago – Cretaceous Extinction (Level 1) 75% of all life became extinct**

55 Million Years Ago – **Bats evolve**

20 Million Years Ago – **The Great Barrier Reef forms.**

*The same reef scientists predict will go extinct in the next 20 years.*

5.2 Million Years Ago – Early Hominids evolve

2 Million Years Ago – Ice age *\*Mammoths and other large animals*

1.6 Million Years Ago – Homo Erectus

200 Thousand Years Ago – Modern humans evolve

**Today – Level 1 Extinction Rate**