



GEOL204, Section 0101, 2025

MESSEL PIT

Vedanti Patel, Tanvi Shah, Max Keeling, Ethan Patrick

WHAT IS THE MESSEL PIT FORMATION?

- Fossil-rich geological site from the Eocene Epoch (~47 million years ago)
- Classified as a *Lagerstätte*
- Originally formed as a deep lake basin
- Today, it provides one of the most complete screenshots of an early **Cenozoic** ecosystem



Fun Fact: Messel fossils are so well preserved that scientists can sometimes even determine an animal's last meal!



WHERE IS THE MESSEL PIT?

- Located in **Germany** near village of Messel, 35 km away from Frankfurt
- UNESCO World Heritage Site



NOTABLE FOSSILS

Darwinius masillae (IDA)

~ 47 Ma

considered one of the closest known **relatives** of modern **primates**, including humans



NOTABLE FOSSILS



Großes »Hessisches«
Urpferd (*Propalaeotherium
hassiacum*)

Translates to “Large
Hessian Proto-Horse”

Relative of modern
horses

~ 45-50 Ma

NOTABLE FOSSILS

Scheinraubtier
(*Lesmesodon*
behnkeae)

Weasel-sized
carnivorous mammal

~49 Ma





NOTABLE FOSSILS

Ameisenbär

(*Eurotamandua joresi*)

Stem species of pangolin

~ 47 Ma

NOTABLE FOSSILS

Langfinger (Heterohyus nanus)

Small tree-dwelling mammal

~ 47 Ma



NOTABLE FOSSILS



Messelopython freyi

Oldest known fossil record
of the python

~ 47 Ma

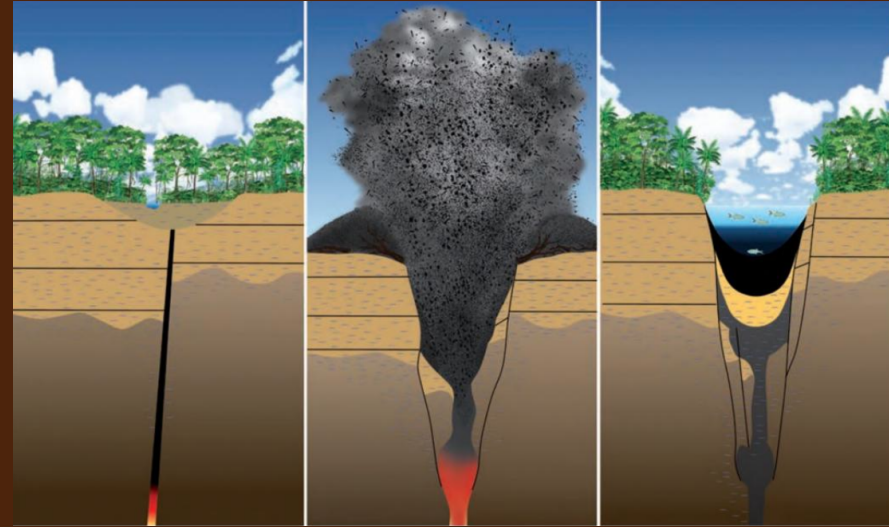
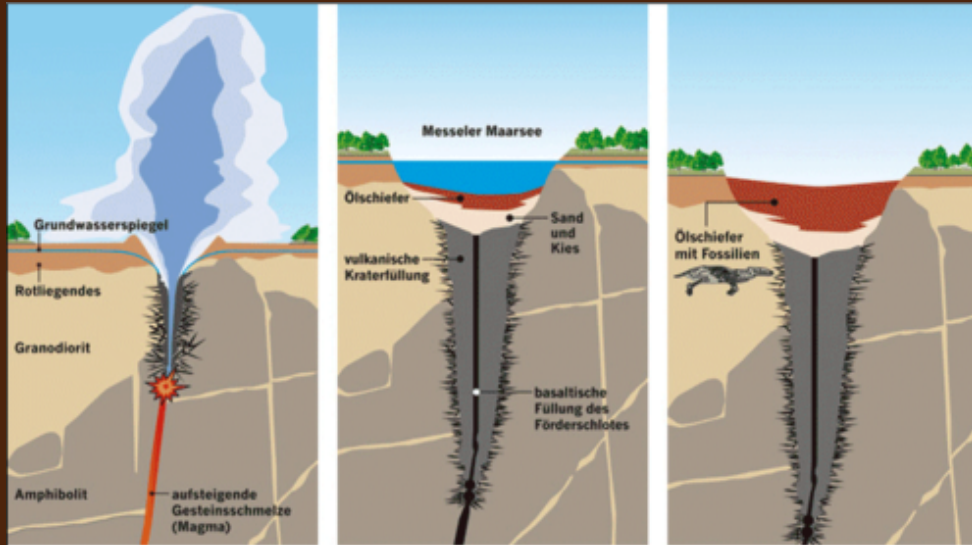
NOTABLE FOSSILS



Käfer aus der Familie der Blattkäfer (Chrysomelidae), die vermutlich der Unterfamilie der Känguru- oder Froschkäfer (Sagrinae) angehört

HOW WAS IT FORMED?

- Originally a maar volcano
- Around 50 Ma, water from the lake came into contact with the hot molten rock → steam and deep crater



Any organism that fell to bottom was preserved due to **anoxic** (low-oxygen) environment