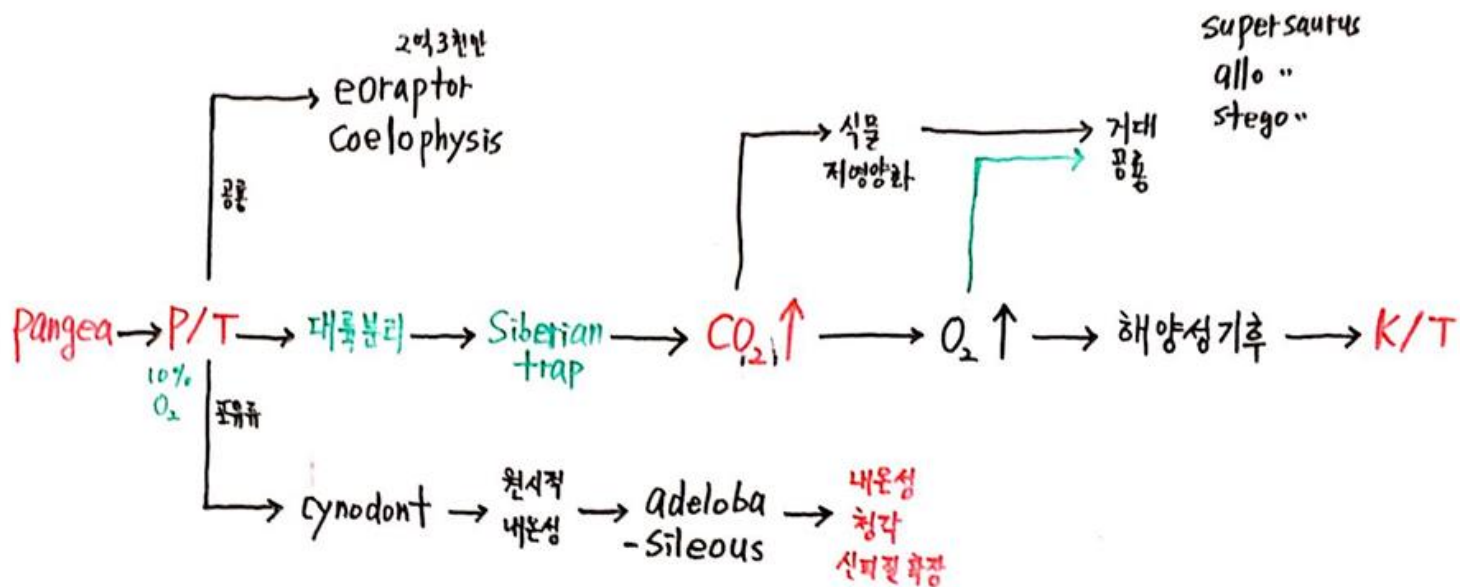
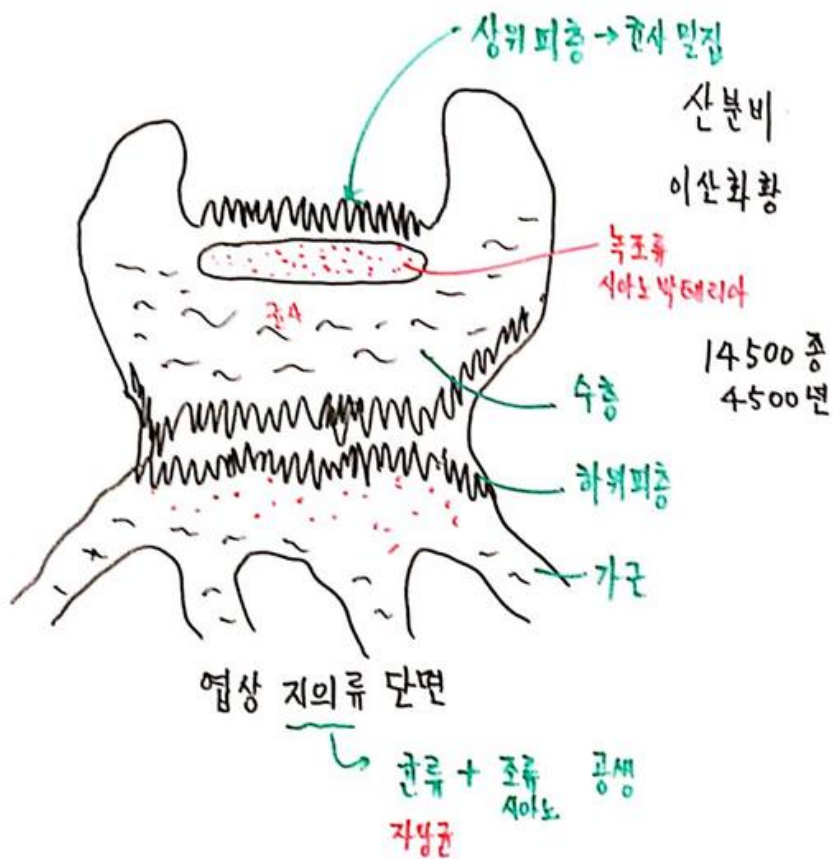


단세포 → 광합성 → 진핵세포 → 다세포 → 캄.폭

녹색식물 육상 → 척추동물 육상 → 현화식물

농업기반 인간사회 → 화석연료 기반 산업혁명

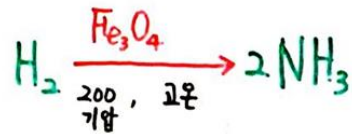
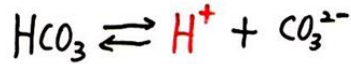
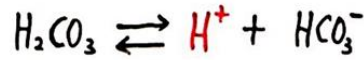
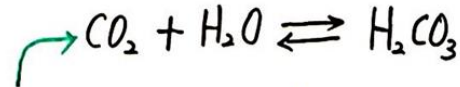


ATP → Adenosine Three phosphate
50 kg PO₄

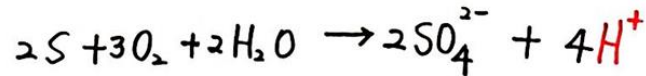
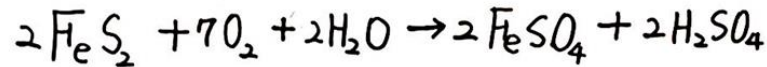
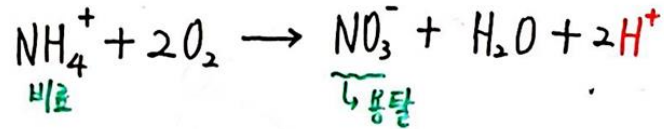
토양 산성화

강한 운동 0.5 kg/min
빈둥거림 24 h 40 kg
조깅 2시간 60 kg
갈색지방

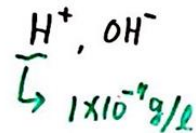
토양 미생물
CO₂
대기보다
100배



Haber-Bösch

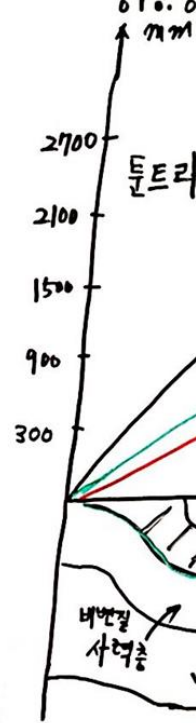
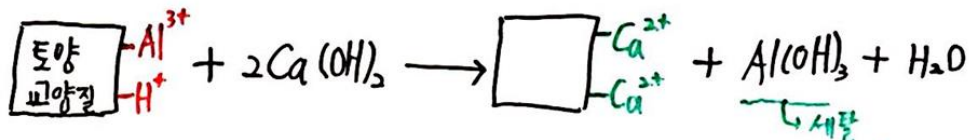
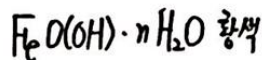
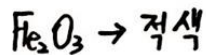
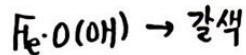


$$pH = -\log_{10} [H^+]$$



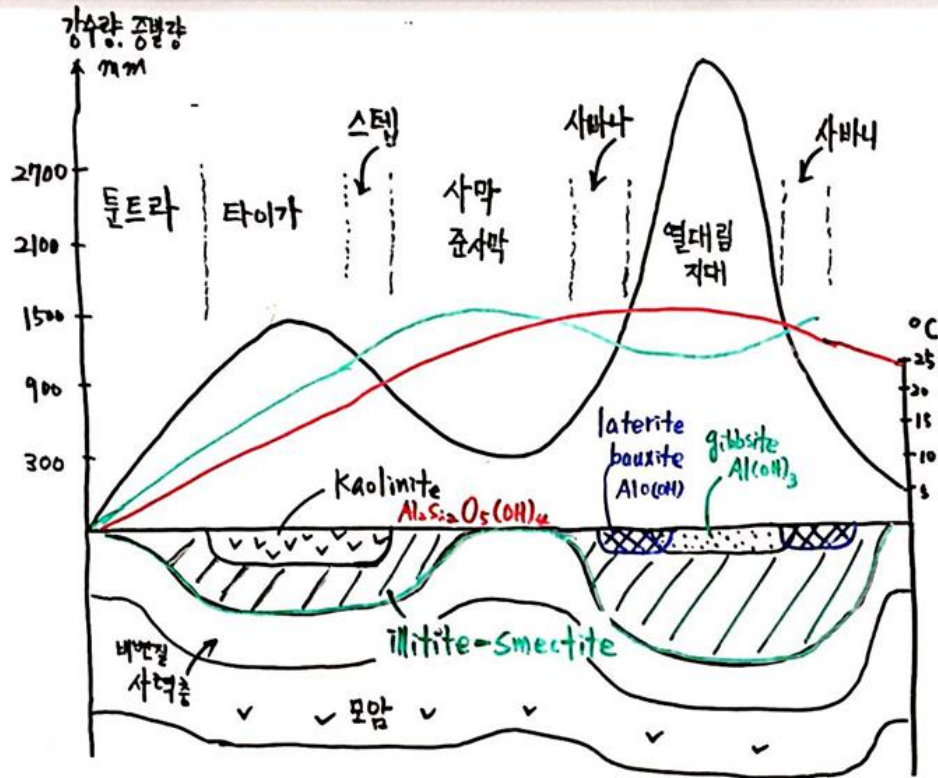
$$pH_{H^+} = -\log 10^{-7} = 7$$

Fe²⁺/Fe³⁺ 토양색

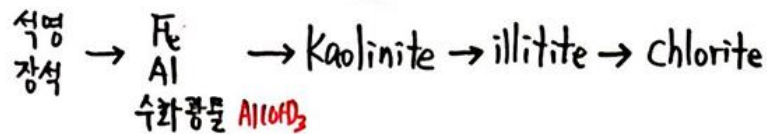


양이온 교환

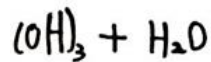
석명
장석 →



양이온 교환 능력 Cation exchange capacity CEC



$\rightarrow \text{smectite} \rightarrow \text{유기물. 퇴비}$



→ 새로운
gibbsite

