

FOSSIL NOTES

What is a fossil?

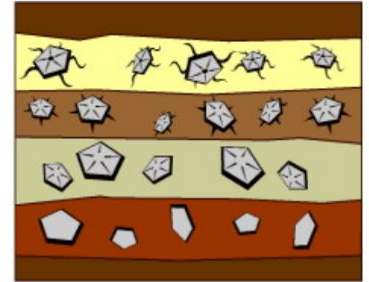
- Preserved remains or _____ of an ancient organism

What do fossils tell us?

- Fossils tell us what an organism was like (_____) and what type of _____ it lived in.

Fossil Record

- The fossil record shows how different groups of organisms have changed over time (_____).
- It _____ similar organisms together and arranges them in order of which they lived- from oldest to most _____.



Rock strata with fossils

Gaps in the fossil record

- Hundreds of _____ fossils document the various intermediate stages in the evolution of modern species from organisms that are now extinct.
- There are still _____ in the fossil record of many species that shrink each year as new fossils are _____.

The sequential nature of groups in the fossil record

- Groups of organisms can be _____ from oldest to most recent by arranging them in _____ of the rock strata in which they were found.

Gradualism

- _____ modification over time among a similar groups of organisms



Gradualism: creature became larger, segments fused

Sudden appearance

- Not all organisms in the fossil record contain transitional forms. Sometime there can be an abrupt _____ of a new form.

Punctuated equilibrium

- Punctuated = _____
- Equilibrium = _____
- _____ that predicts that a lot of evolutionary change occurs rapidly separated by long periods of stability (_____).



Punctuated equilibrium: head changed shape, loss of segment

Extinction

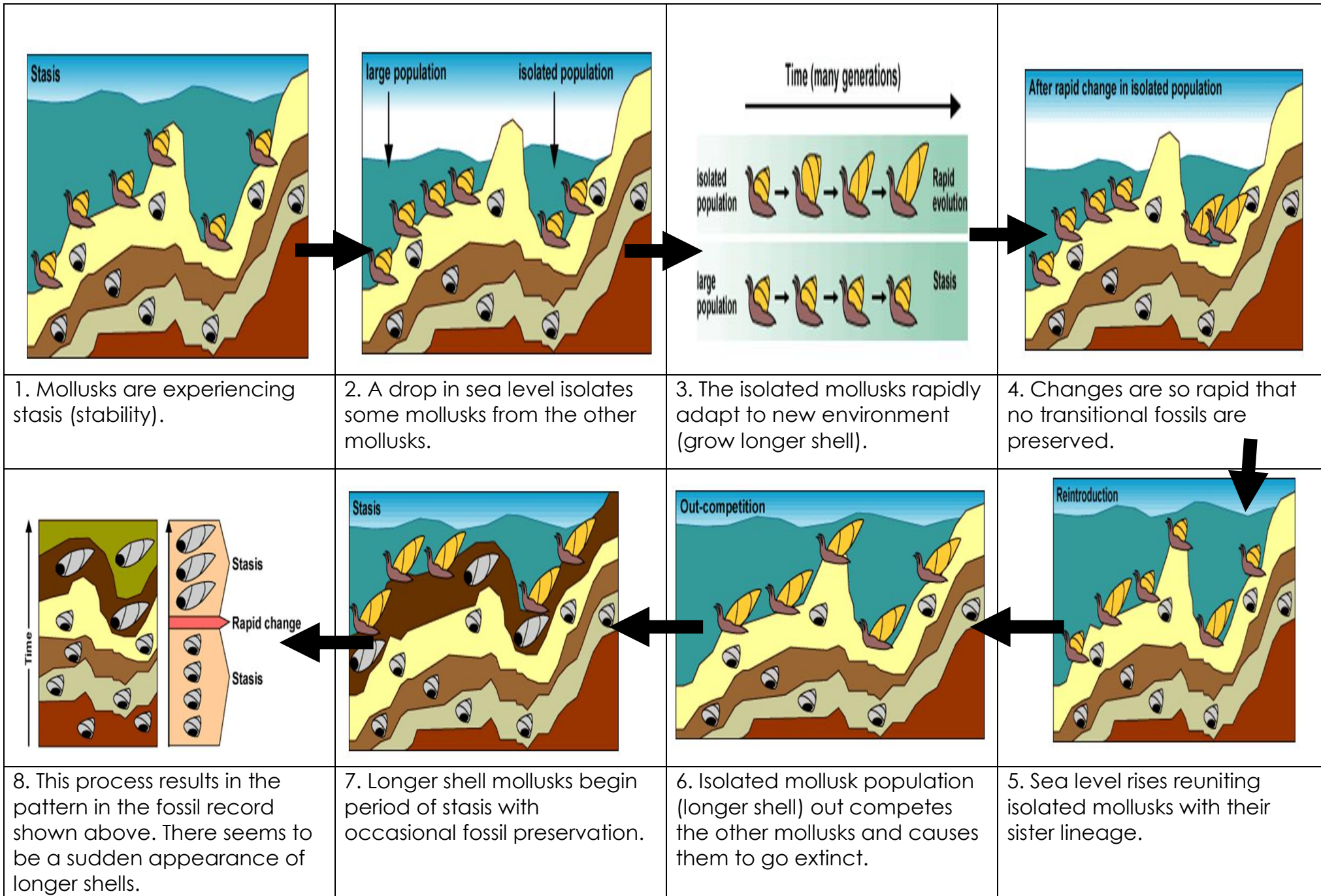
- What do a mammoth, saber tooth tiger and trex have in common?

What percentage of all species that have ever lived on earth are extinct? _____

Mass extinction

- The extinction of a _____ number of species within a relatively short period of time.
- Due to _____ events or environmental change that occurred too rapidly for species to _____.
- At least _____ mass extinctions have been identified in the fossil record.

The Theory of Punctuated Equilibrium



1. Mollusks are experiencing stasis (stability).

2. A drop in sea level isolates some mollusks from the other mollusks.

3. The isolated mollusks rapidly adapt to new environment (grow longer shell).

4. Changes are so rapid that no transitional fossils are preserved.

8. This process results in the pattern in the fossil record shown above. There seems to be a sudden appearance of longer shells.

7. Longer shell mollusks begin period of stasis with occasional fossil preservation.

6. Isolated mollusk population (longer shell) out competes the other mollusks and causes them to go extinct.

5. Sea level rises reuniting isolated mollusks with their sister lineage.