Earth's History Quick Reference Sheet

1. Oldest rocks are on the bottom unless, the rocks have been overturned.

2. Any event that crosses another layer is younger than it (faults, folds, intrusions).

3. Need to observe contact metamorphism to determine the relative age of layers (burns it = younger). If a rock layer has tick marks on it, it is older than the intrusion.

4. Be able to tell the difference between folding, faulting, and tilting of rock layers.

5. Know how fossils and sedimentary rocks can be used to identify their environments of formation.

6. Marine fossils indicate the area was once covered by water.

7. Index fossils are found all over (widespread and abundant) and only lived for a short geologic time period.

8. The atmosphere and oceans formed from outgassing of volcanoes (CO_2, N_2, H_2O). Then algae (plant like) organisms turned the CO_2 rich atmosphere into one containing O_2.

9. Precambrian Time Period is 4 billion years long (only simplest life forms existed).

10. <u>RELATIVE LENGTH OF GEOLOGIC TIME PERIODS</u>

[Cen] [-Mez-] [---Pal---] [---------- Precambrian part of Geologic Time Scale----------]

11. Life evolved from simple to complex organisms, evolved because of changes in environment.

12. Sedimentary Rocks are ALWAYS deposited in horizontal layers and underwater.

13. For an unconformity to occur, rocks must be uplifted and eroded.

14. Unconformity -ancient erosional surface - represents missing rock layers - time gap. Also seen as the line that separates crazy layers from straight layers.

15. Volcanic ash - good time marker because it spreads out quickly over a large area.

16. Radioactive dating - compare percentage of unstable atoms to stable atoms to get age of rock.

17. Half Life - the time it takes for 1/2 the unstable atoms to decay into stable atoms.

18. Half Life never changes NO Matter What! Radioactive elements decay forever!

19. It a rock contains 50% unstable and 50% stable - 1 half life has past (25%-75% - 2 Half Lives).

20. Carbon dating is used for things that were once living and less than about 75,000 years old.

21. Asteroid Impacts are thought to cause mass extinctions (dinosaurs died 65 million years ago).

22. Asteroids leave behind large craters in the Earth's crust and shoot ash and debris into the atmosphere.