

Name: _____

“NOVA - Origins: How Life Began” Worksheet

1. Earth is a place that is _____ and _____ by life.
2. When was Earth “born”?
3. [Earth] was covered in _____ and smothered in noxious _____.
4. What cataclysm occurred that eventually led to the Moon’s formation?
5. The young Sun was _____ than it is today.
6. When the atmosphere was thicker and dominated by CO₂, the Earth had a _____ tinge to it and the oceans would have had an olive _____ color rather than our familiar blue color.
7. For about the first 600 million years, comets and asteroids (300 miles across) pounded our planet- a time known as the “Heavy Bombardment.” Their impacts vaporized Earth’s _____ and melted its _____.
8. Hydrogen sulfide can be extremely _____ so the scientists wear gas masks inside the cave.
9. Can any other forms of life survive in the deep recesses of a cave so toxic to humans?
10. Snot acidity (pH) is that of _____.
11. All living things, from bacteria to mice to you and me, are made from a small set of chemical elements: _____, oxygen, _____, nitrogen- four of the most common elements in the universe.
12. The brown goo that formed in Stanley Miller’s lab experiment was what? _____
(They are compounds that form molecules when carbon and other elements link together and are the building blocks of proteins, cells – which are the vital ingredients of all living things.)
13. A) Where are some of the oldest rocks found on Earth?
B) How old are these rocks?
14. What do you see in a magnifying piece of space dust?
15. There are more than _____ kinds of amino acids that have been found in meteorites, and many are the fundamental ingredients of _____ that make up living cells.
16. Amino acids, combinations of carbon and other basic elements, had fused together to form more complex molecules called _____.
17. [In underwater volcano vents] despite scalding _____, acid eruptions and total lack of _____, [scientists] found creatures of all types thriving.
18. Named after the _____ - _____ color of their cells, these cyanobacteria use photosynthesis to collect energy from the sun. They secrete a sticky coating to shield them from _____ radiation.
19. Over time, stromatolites spread out across the _____. As a byproduct of photosynthesis, the ancient bacteria formed a waste product: _____.
20. Cyanobacteria produced oxygen in varying amounts as water _____ changed throughout the seasons.
21. Tiny microbes raised the level of oxygen from less than one percent to today’s _____ percent.
22. With the protection of the _____ layer, life was able to diversify into more complex _____.
23. It’s only been the last _____ percent of Earth’s history where there was life on the surface of Earth that you could see with your naked eye.

Complete a “one pager” for How Life Began

1. Use a visual image (drawing) to create a central focus.
2. 3 statements of fact or personal opinion about the video “How Life Began”
3. Scatter eight words/phrases around the image about the video “How Life Began”
4. Write two questions you have about the video “How Life Began”
5. Put a border around the edges relating to the video “How Life Began”
6. Use colored pencils and/or markers. These must look nice and be in color
7. The grade will be for neatness, creativity and content.