**Cosmos Episode 9 Worksheet                            Name:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_**

**Directions:** Answer the questions as you watch episode 9 of Cosmos: A Spacetime Odyssey.

1.  On what day of the “cosmic calendar” is 350 million years ago?

2. Why could insects grow to be so much larger 350 million years ago than they can today?

3. How do insects take in oxygen?

4. How big was most vegetation on land before trees evolved?

5. What happened to the trees in the [Carboniferous Period](http://evolution.about.com/od/LifeOrigins/tp/Periods-of-the-Paleozoic-Era.htm) after they died?

6. Where were the eruptions centered during the mass extinction in the Permian Period?

7. What had the buried trees in the Carboniferous Period turned into and why was this bad during the time of the eruptions in the Permian Period?

8. What is another name for the Permian [mass extinction](http://evolution.about.com/od/LifeOrigins/g/Mass-Extinction.htm) event?

9. New England was a neighbor to which geographical area 220 million years ago?

10. The lakes that broke apart the great supercontinent turned into what eventually?

11. What did Abraham Ortelius say ripped America away from Europe and Africa?

12. How did most scientists in the early 1900s explain that certain dinosaur fossils were found in both Africa and South America?

13. How did Alfred Wegener explain why there were the same mountains on opposite sides of the Atlantic Ocean?

14. What happened to Alfred Wegener the day after his 50th birthday?

15. What did Marie Tharp discover in the middle of the Atlantic Ocean after drawing a map of the ocean floor?

16. How much of the Earth lies beneath 1000 feet of water?

17. What is the longest submarine mountain range in the world?

18. What is the name of the deepest canyon on Earth and how deep is it?

19. How do species get light at the bottom of the ocean?

20. What is the process bacteria use in the trenches in order to make food when sunlight doesn’t reach that far?

21. What created the Hawaiian Islands millions of years ago?

22. What is the core of the Earth made of?

23. What two things keeps the mantle a molten liquid?

24. How long were dinosaurs on the Earth?

25. What did Neil deGrasse Tyson say the temperature of the Mediterranean basin was hot enough to do when it was still a desert?

26. How did tectonic forces bring North and South America together?

27. What two adaptations did early [human ancestors](http://evolution.about.com/od/humans/tp/Human-Ancestors.htm) develop in order to swing from trees and to travel short distances?

28. Why were human ancestors forced to adapt to living and traveling on the ground?

29. What caused the Earth to tilt on in axis?

30. How did the human ancestors get to North America?

31. How long is the current intermission in the Ice Age projected to last?

32. How long has the unbroken “string of life” been going?