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| **Introduction to Biology**  | http://www.biologyjunction.com/images/Copy_3_of_AG00142_.GIF |

***Science of Life***

1. Approximately how long ago did life arise on earth?

2. Describe the first organisms.

3. Organisms change or \_\_\_\_\_\_\_\_\_\_ over long periods of time.

4. Today, millions of \_\_\_\_\_\_\_\_\_ of organisms exist on earth.

5. The \_\_\_\_\_\_\_\_ is the basis unit of life and makes up all \_\_\_\_\_\_\_\_\_\_\_\_\_.

6. \_\_\_\_\_\_\_\_\_\_\_\_\_ organisms are made of a single cell and are genetically \_\_\_\_\_\_\_\_\_\_\_ to their parent cell.

7. Many-celled organisms are known are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and they may be made of \_\_\_\_\_\_\_\_\_\_\_ types of cells.

8. What is true about the size of most cells?

9. Are cells organized?

10. Specialized structures in cells are called \_\_\_\_\_\_\_\_\_\_\_\_\_.

11. What surrounds all cells?

12. All cells must contain a set of \_\_\_\_\_\_\_\_\_\_\_\_\_\_ instructions or DNA.

13. Organisms maintain stable internal conditions called \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

14. Name 4 things that organisms must keep stable or balanced.

15. For a species to continue, some of its members must be able to \_\_\_\_\_\_\_\_\_\_\_\_\_ and pass on their traits to their \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

16. What does DNA stand for?

17. DNA's instructions are called \_\_\_\_\_\_\_\_\_\_ and code for the complex \_\_\_\_\_\_\_\_\_\_\_\_ necessary for life.

18. \_\_\_\_\_\_\_\_\_\_\_ cells or body cells each have a full set of \_\_\_\_\_\_\_\_\_ or hereditary material.

19. \_\_\_\_\_\_\_\_\_\_\_\_ reproductions combines hereditary information from \_\_\_\_\_ parents.

20. When an sperm and egg join, a fertilized egg or \_\_\_\_\_\_\_\_\_\_ forms and contains DNA from \_\_\_\_\_\_\_\_ parents.

21. In \_\_\_\_\_\_\_\_\_\_\_ reproduction, only a single parent cell reproduces and the new cells are genetically \_\_\_\_\_\_\_\_\_\_\_\_\_ to each other and the original cell.

22. \_\_\_\_\_\_\_\_\_\_\_\_\_, not individual organisms, change or evolve over many generations.

23. \_\_\_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_\_\_ is the driving force for evolution.

24. According to natural selection, which individuals in a population are more likely to survive and be able to reproduce?

25. A change in population due to the survival & reproduction of organisms with favorable traits is known as what?

26. Define ecology.

27. Name 3 things that organisms need from their environment.

***Matter, Energy, & Organization***

28. Organisms require a constant supply of \_\_\_\_\_\_\_\_\_\_\_\_.

29. The \_\_\_\_\_\_\_\_\_ directly or indirectly supplies the energy for living things.

30. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ is the process of capturing sunlight and changing it into stored \_\_\_\_\_\_\_\_\_\_\_\_ energy for organisms.

31. \_\_\_\_\_\_\_\_\_\_ are organisms that can make their own food.

32. \_\_\_\_\_\_\_\_\_\_\_\_\_ use \_\_\_\_\_\_\_\_\_ for photosynthesis converting \_\_\_\_\_\_\_\_\_ and \_\_\_\_\_\_\_ into sugar and \_\_\_\_\_\_\_\_\_\_.

33. \_\_\_\_\_\_\_\_\_\_\_\_\_\_ use chemicals to get energy.

34. Organisms that can't make their own food are known as \_\_\_\_\_\_\_\_\_\_\_\_\_ and may be \_\_\_\_\_\_\_\_\_\_ eating autotrophs, \_\_\_\_\_\_\_\_\_\_\_\_\_\_ eating other heterotrophs, or \_\_\_\_\_\_\_\_\_\_\_\_\_\_eating both autotrophs and heterotrophs to get energy.

***World of Biology***

35. the size of an organisms depends on the \_\_\_\_\_\_\_\_\_\_\_ of cells that make it up and not the \_\_\_\_\_\_\_ of the cells.

36. Organelles are cell structures that carry out different \_\_\_\_\_\_\_\_\_\_\_ for the cell.

37. The sum of all the chemical processes in an organisms is called \_\_\_\_\_\_\_\_\_\_\_\_\_.

38. \_\_\_\_\_\_\_\_\_ is needed for all metabolic processes including growth and reproduction.

39. Homeostasis is when a n organism maintains  \_\_\_\_\_\_\_\_\_\_\_\_ internal conditions such as body temperature.

40. Name 2 processes that result in the growth of an organism.

41. All new cells develop from \_\_\_\_\_\_\_\_\_\_\_\_\_\_ cells.

42. new cells \_\_\_\_\_\_\_\_\_\_\_ as they mature.

43. The process of an organism become an adult is called \_\_\_\_\_\_\_\_\_\_\_\_\_\_ and involves numerous cell \_\_\_\_\_\_\_\_\_\_\_\_ and cell \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

 44. Do all members of a species have to be able to reproduce for the species to continue?

45. Organisms respond to \_\_\_\_\_\_\_\_\_\_\_\_ from their environment such as light, \_\_\_\_\_\_\_\_\_\_, heat, and touch.

***Scientific Method***

46. The scientific method begins with \_\_\_\_\_\_\_\_\_\_\_\_\_ that involves using your senses to perceive objects or events in the natural world.

47. Based on their observations and questioning, scientists make a \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ that can tested through experimentation.

48. Hypothesis may have to be \_\_\_\_\_\_\_\_\_\_\_ after an experiment is done if it is NOT supported by the data.

49. Testing a hypothesis must be done in a \_\_\_\_\_\_\_\_\_\_\_\_\_\_ experiment that includes a control group that can be compared to an \_\_\_\_\_\_\_\_\_\_\_\_\_\_ group.

50. How many factors may be different between the control group & experimental group?

51. What is this one factor called?

52. The \_\_\_\_\_\_\_\_\_\_\_ variable is measured in both groups.

53. Information collected in an experiment is called \_\_\_\_\_\_\_\_\_\_\_.

54. When numerical data is collected, it is called \_\_\_\_\_\_\_\_\_\_\_\_\_ data.

55. \_\_\_\_\_\_\_\_\_\_\_\_\_ may be used when the population size is too large for the experiment.

56. Collected data must be organized into \_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_, or graphs.

57. A \_\_\_\_\_\_\_\_\_\_\_ may be formed from many related hypotheses that have been tested & support the evidence.

58. When scientists complete their experiments they must \_\_\_\_\_\_\_\_\_ their work with other scientists.

59. Scientific work may be printed in scientific \_\_\_\_\_\_\_\_\_\_\_\_ or presented as papers as scientific \_\_\_\_\_\_\_\_\_\_\_\_\_\_.

***Microscopes***

60. Microscopes produce an enlarged \_\_\_\_\_\_\_\_\_\_\_\_ of an object due to \_\_\_\_\_\_\_\_\_\_\_\_ of the microscope lenses.

61. The clearness of a microscope image is known as \_\_\_\_\_\_\_\_\_\_\_\_.

62. Arrange these things in order from smallest to largest - fly, animal cell, atom, virus, organelle, bacterial cell.

63. Label the parts of this microscope.



64. Where is the specimen placed in order to view it through a microscope?

65. What lens do you look through at the top of a microscope and what is its magnification?

66. What are the lenses called on the revolving nosepiece?

67. How do you determine the total magnification for a microscope?

68. Which knob should be turned to focus on low power?

69. Which knob should be turned to focus on high power?

70. How should a microscope be carried?

71. What should be done when you are finished using a microscope?

72. The best light microscopes can magnify images up to how many times?

73. What type of microscope can used to view inside of cells that have been thinly sliced?

74. What is total magnification for the TEM?

75. What type of microscope produces a 3-D image of the surface of an object?

76. Can electron microscopes be used to view living specimens?

***Measurements***

77. Scientists use the \_\_\_\_\_\_\_\_\_\_\_\_\_ system or \_\_\_\_\_\_\_.

78. The SI system is based on units of \_\_\_\_\_\_\_.

79.The basic metric unit of measure is \_\_\_\_\_\_\_\_\_\_ for mass, \_\_\_\_\_\_\_\_\_ for volume, \_\_\_\_\_\_\_\_\_\_ for temperature,  \_\_\_\_\_\_\_\_\_\_\_\_\_ for length, and \_\_\_\_\_\_\_\_\_\_ for time.

80. What are the most common prefixes used for biology and what do they stand for?