101 Things to Know About Science

1. All things are made up of atoms, which are invisible to the eye.

2. There are as many different kinds of atoms as there are elements, and there are more than 100 elements in the world.

3. All matter is a gas, a liquid, or a solid. There is also plasma, but it is still being researched and not yet in textbooks.

4. Rocks, gems, and your teeth are crystals.

5. Water is a special substance that we cannot live without.

6. A change of one kind of matter into another kind of matter is a chemical reaction.

7. All matter has mass and density.

8. Energy can never be destroyed—it is constantly in use or being stored for future use.

9. Kinetic energy and potential energy are two important forms of energy.

10. Heat is energy that flows from warmer objects to colder ones.

11. If it weren't for the Earth's invisible force of gravity, we would float off into space!

12. Electricity can create a force.

13. A compass uses a magnetic force to tell you which way is north.

14. Friction is a force that slows things down.

15. Newton's first law of motion: A body in motion tends to remain in motion unless acted upon by an outside force.

16. Newton's second law: Force equals mass times acceleration.

17. Newton's third law: For every action there is an equal and opposite reaction.

18. The speed of sound through air is 343 meters per second.

19. Light travels at 186,282 miles (about 300 million meters) per second.

20. White light is made up of the seven colors of the rainbow.

21. Two important sources of energy are the sun, a renewable resource, and fossil fuels, a nonrenewable resource.

22. An ecosystem is a community of living and nonliving things in one area.

23. Three kinds of rocks make up most of the Earth's crust: igneous, sedimentary, and metamorphic.

24. The center of the Earth is metal and is at least 6,700 degrees Fahrenheit.

25. All of the continents were once connected in one huge continent know as Pangaea.

26. A volcano is a hole or crack in the crust of the Earth that lava and ash come out of.

27. An intricate web of water flows through openings under Earth's surface.

28. Over 800,000 earthquakes happen around the world each year.

29. Mountains are continually growing or shrinking.

30. Glaciers are long, moving rivers of ice that move about 1 foot a week.

31. All rivers start from a source, such as mountain springs or melting glaciers.

32. Most of the ocean floor is more than 6,560 feet deep.

33. Currents, waves, and tides keep the ocean waters in constant motion.

34. Our atmosphere, several layers of gases that wrap around the Earth, is about 430 miles deep.

35. When air is warmed by land and water it rises and causes wind, hurricanes, cyclones, and tornadoes.

36. Water on land turns into vapor, rises to form clouds, and comes back down as rain.

37. Clouds are made of water or ice.

38. Every minute, about 600 lightning bolts strike the Earth.

39. Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus, Neptune, and Pluto are the nine planets in our solar system. (Pluto is now considered a “dwarf planet,” but remains a planet in textbooks because it is still under debate.)

40. Planets are made of rocks, liquid, and gas.

41. The sun is a star and the largest object in our solar system.

42. The moon, Earth’s nearest neighbor, is about 239,000 miles from Earth.

43. The Earth orbits the sun as it rotates (spins) on its axis at 1,000 miles per hour.

44. There are 88 constellations, or groups of stars, in the sky.

45. Earth and our solar system are in the Milky Way galaxy.

46. The universe is expanding every minute.

47. Fossils give us proof that life existed on Earth millions of years ago.

48. The first sign of life on Earth appeared about 4 million years ago with a single cell.

49. The development of animals took place over a span of 570 million years.

50. Dinosaurs dominated the Earth for 160 million years.

51. Evolution is the change in all living things from generation to generation.

52. The theory of evolution is based on natural selection, or survival of the fittest.

53. Fossils show that today's mammals, while similar to their early ancestors, are very different in many ways.

54. Carbon is the most important element in living things.

55. All living things use energy, are made of cells, reproduce, and are able to adapt to their environment.

56. Every living thing starts out as one cell.

57. In the nucleus of every cell is DNA, the chemical "instructions" that dictate what individual traits living things will have.

58. All living things fit into six kingdoms: Eubacteria, Archaebacteria, Protista, Fungi, Plantae and Animalia.

59. A seven-tiered classification system organizes all living things.

60. Most living things in this world are one-celled creatures called protozoans.

61. Fungus is neither plant nor animal but belongs to the fungal kingdom.

62. Plants use the sun's energy to make their own food in a process called photosynthesis.

63. Plants and humans depend on each other for the air they breathe.

64. Ferns and mosses have been around for 350 million years.

65. A seed is a package with all the ingredients needed to grow a plant.

66. Tomatoes, peanuts, and pea pods are fruits that come from flowers.

67. All trees are flowering plants and are either coniferous or deciduous.

68. Carnivores are meat-eating animals and herbivores are plant-eating animals.

69. Most of the world's animals are invertebrates.

70. Insects make up two-thirds of all the known animal species on Earth.

71. Over three-fourths of all insects go through the four stages of complete metamorphosis.

72. Spiders are not insects but belong to their own group, arachnids.

73. Honeybees, termites, ants, and some wasps live in organized colonies.

74. Fish were the first animals with backbones.

75. Frogs, toads, and salamanders are amphibians that live both in water and on land.

76. Alligators, crocodiles, turtles, tortoises, lizards, and snakes are all reptiles.

77. Birds have bodies that make it easy for them to stay up in the air.

78. Some animals migrate—travel along distances for warmer climates and to find food.

79. Mammals are warm blooded, have fur and hair, and most give birth to live babies.

80. Humans, apes, monkeys, and lemurs all belong to the order called primates.

81. The brain receives 100 million signals every second from all over the body.

82. There are 206 bones in the human skeleton.

83. An adult body has more than 600 muscles.

84. Your skin is your biggest organ.

85. The nervous system is made up of the brain, the spinal cord, and all the nerves throughout the body.

86. Smell and taste, two of our five senses, work together to send messages to the brain about what food tastes like.

87. The ear, used for hearing, has three parts and is shaped especially to capture sounds.

88. The eyelid, pupil, retina, cones, and rods are all parts of the eye that allow us to see.

89. The digestive system breaks down food, absorbs nutrients, and disposes of waste.

90. The respiratory system works with the heart to pump oxygen-rich blood throughout the body.

91. The circulatory system is made up of the heart, arteries, and veins.

92. The endocrine system releases hormones into our blood to help us grow.

93. Your immune system protects you from diseases.

94. There are two kinds of diseases: infectious and noninfectious.

95. Sign and spoken languages were the first inventions of humans.

96. Stone tools from over 2 million years ago were human's first technological development.

97. All machines in the world can be reduced to six simple machines: lever, pulley, wheel, inclined plane (ramp), wedge, and the screw.

98. Steam engines powered trains, boats, and machines, changing industry immensely.

99. Light bulbs and electricity allow us to have longer days.

100. Almost any information can be transformed into electrical signals, including a telephone call.

101. The first computer took up a whole room.