

ATOMS AND ELEMENTS - KEY

1. What is a compound? **two or more elements that are tied together**
2. Which state can it be in? **solid, liquid, gas**
3. Which atom is the lightest? **hydrogen**
4. Which three parts do atoms consist of? **protons, neutrons and electrons**
5. What are electrons? **they travel in paths around the nucleus**
6. A proton has a **positive** charge, an electron has a **negative** charge.
7. How do electrons move around the nucleus? **they travel in up to seven paths; each path can hold a different number of electrons; inner electrons travel fast, outer electrons travel slow**
8. What does the atomic number of an element tell you? **the number of protons an atom has**
9. What is the atomic mass? **the number of protons and neutrons in an atom**
10. What is the periodic table? **it organizes atoms in groups according to their atomic number**
11. If an atom has more neutrons than protons, it is called an **isotope**
12. What happens when an atom crashes with another atom? **they gain or lose electrons**
13. How do scientists create radioactivity? **by bombarding atoms with small particles in a laboratory**
14. What happens when the nucleus of an atom splits? **energy is set free**
15. When and where was the first atomic bomb dropped? **at the end of World War II over Japan**
16. What kind of fuel is used to power rockets? **liquid hydrogen and liquid oxygen**
17. Name a few interesting compounds. **salt, sugar, methane, natural gas**
18. Which element do organic compounds always have? **carbon**
19. What kind of structure does a hydrogen atom have? **one proton and one electron**
20. What substance do you get when you combine two hydrogen atoms with one oxygen atom? **water**

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21. At which temperature does liquid hydrogen freeze? **-259 ° C**
22. Where can hydrogen be found? **the sun and many stars; in the Earth's crust; in compounds of plants and animals**
23. What are hydrocarbons? Name a few. **compounds that have only hydrogen and carbon in them – petroleum, natural gas, plastic**
24. What are noble gases? **they cannot be combined with other elements**
25. Why is helium used in balloons? **it is lighter than air**
26. How is helium used in medicine? **patients with asthma inhale helium because it enters the lungs more easily**
27. Most of the Earth's atmosphere is made up of **nitrogen**
28. How does the industry get pure iron? **out of iron ore that is melted**
29. Where is iron found in our bodies? **in red blood cells**
30. How do farmers use nitrogen? **as fertilizers**
31. Which element do all living creatures have in them? **carbon**
32. Where is carbon found in its purest form? **in diamonds and graphite**
33. What is graphite and where can you find it? **soft, grey mineral; it is formed under the Earth's surface**
34. Chlorine and sodium together form **salt**
35. Why is chlorine used in swimming pools? **to make water cleaner and purer**
36. What is an alloy? **material that is made up of two or more metals combined**
37. From which raw material do we get aluminium? **bauxite**
38. Why is aluminium often used instead of steel? **it is very strong and light, can be formed easily**
39. Why has gold become such a valuable material? **it is used in jewellery and as coins**
40. Where and when did gold rushes happen? **in the middle of the 19th century in California, Alaska and Australia**