

Grade 7 Science - Pure Substances and Mixtures **Bill Nye – Atoms and Molecules**

Answers

1. Things are made up of **Tiny** pieces of stuff.
2. "Atoms" is from a Greek word meaning **uncuttable**.
3. The heavy particles of the atom are in the **middle**. The **light** particles are on the outside. Atoms are mostly **empty** **space**.
4. **Protons** and **Neutrons** are found in the nucleus. Their charges are **positive** and **neutral**, respectfully. **electrons** buzz around the nucleus at a **great/huge** distance away.
5. Electrons **repel** each other and move around so fast that the atom acts like a **solid**.
6. **1,000,000** atoms would fit on the head of a pin.
7. Atoms are the basic **building** **blocks** of all matter.
8. When atoms combine, they can make **molecules**.
9. All matter is made of **atoms** and **molecules**.
10. Water is **2** parts **hydrogen** and **1** part **oxygen**. We know this because water can be split apart by **electrolysis**.
11. To "see" the spaces in matter, add one cup of water and one cup of **alcohol**. The total volume is **not** **exactly** two cups, since alcohol has a lot of **empty** **space** between molecules, where water molecules can **fit**.
12. The number of **protons** in the nucleus makes the atoms different. Elements have been arranged on a **periodic** **table**. The **atomic** number represents the number of protons.
13. **92** elements occur naturally.
14. NaCl is SALT. $C_3H_5N_3O_9$ is nitroglycerine and is used to make **dynamite**.
15. Inside protons and neutrons are **quarks**. These are studied by a **nuclear** **physicist**.
16. Everything in the universe is either **matter** or **energy**. The smallest pieces of matter are **atoms**.
17. **carbon** is in every living thing, like us. **Organic** chemistry is the study of this element's compounds.