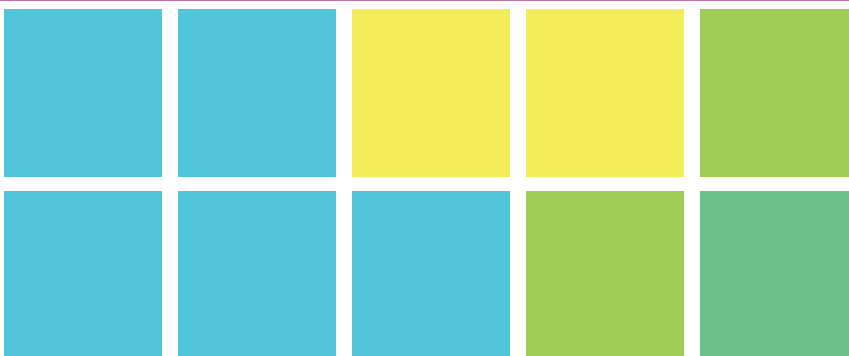


# Atom Structures



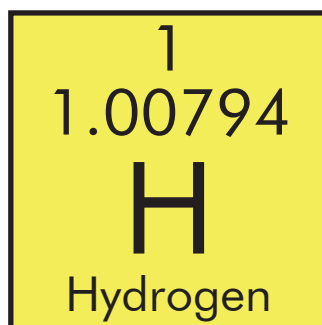
The number of neutrons in an element is not listed anywhere on the periodic table. However, it is not hard to figure out.

The atomic mass of an element is the average of all naturally occurring isotopes. Since electrons weigh almost nothing compared to protons and neutrons (which weigh the same) the atomic mass can be assumed to be the weight of all the protons and neutrons in an atom. The weight of a proton and neutron in all elements is one.

From this all we have to do is round the atomic mass of each element to the nearest whole number and subtract the atomic number (the number of protons in the element) and we find the number of neutrons.

For example: Hydrogen's atomic number is 1, its atomic weight is 1.00794, which we round down to 1.  $1 - 1 = 0$ . Hydrogen has no neutrons.

Use your math skills to answer the questions on the following page.



$$1 \text{ (rounded atomic mass)} - 1 \text{ (atomic number)} = 0 \text{ neutrons}$$

# Atom Structures

# Problems Sheet

How many neutrons are in carbon?

Name the element that has 8 neutrons.

How many neutrons does gold have?

If an element's atomic mass is 70 and it has 39 neutrons, how many protons does it have? What element is this?

How many neutrons does radon have?

Name three elements that have the same amount of neutrons and protons.